Fishery Management Report No. 13-36

2012 Lower Cook Inlet Area Finfish Management Report

by

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and

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Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

FISHERY MANAGEMENT REPORT NO. 13-36

2012 LOWER COOK INLET AREA FINFISH MANAGEMENT REPORT

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The Fishery Management Reports series was established in 1989 by the Division of Sport Fish for the publication of an overview of management activities and goals in a specific geographic area, and became a joint divisional series in 2004 with the Division of Commercial Fisheries. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Fishery Management Reports are available through the Alaska State Library and on the Internet: http://www.adfg.alaska.gov/sf/publications/ This publication has undergone regional peer review.

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ABSTRACT

The 2012 Lower Cook Inlet (LCI) management area (all coastal waters and inland drainages entering waters north of Cape Douglas and west of Cape Fairfield and south of Anchor Point) commercial salmon harvest was 499,000 salmon. The harvest was comprised of 256,600 pink *Oncorhynchus gorbuscha*, 186,600 sockeye *O. nerka*, 55,500 chum *O. keta*, 243 coho *O. kisutch*, and 137 Chinook salmon *O. tshawytscha*. Approximately 76.8% of the harvest, 382,900 fish, was common property harvest and 115,700 fish were sold for hatchery cost recovery. Homepack, educational permits, and donated fish accounted for less than 1%. Based on fish ticket reporting of prices, the preliminary estimated value of the commercial salmon harvest was $2.2 million, including hatchery sales. This amount does not include postseason adjustments, bonuses, etc. During the 2012 season, 15 set gillnet, and 16 purse seine permit holders reported deliveries. Set gillnet harvest value was an estimated $127,200, setting average permit earnings at $8,500; purse seine fishery exvessel harvest value was an estimated $1.1 million, setting average permit earnings at $68,000. Revenue generated for hatchery operations was approximately $1.0 million. The LCI management area personal use and subsistence fisheries harvested a total of 3,900 salmon. For these fisheries, approximately 113 subsistence and personal use permits were issued to Alaska residents. In addition, 1,400 coho salmon were landed by sport fish permit holders in a derby in Seward. Though these fish were subsequently sold commercially, they are not included in the total commercial harvest. The commercial Pacific herring *Clupea pallasii* fishery in the Kamishak Bay District was closed in 2012 for the eleventh consecutive year because the spawning biomass remained below the 6,000 ton regulatory threshold.

Key words Lower Cook Inlet, Kamishak Bay, Kachemak Bay, Resurrection Bay, salmon, harvest, set gillnet, purse seine, commercial salmon harvest, salmon enhancement, CIAA, hatchery, cost recovery, sport fishery, subsistence fishery, personal use fishery, escapement, sockeye salmon, *Oncorhynchus nerka*, pink salmon, *Oncorhynchus gorbuscha*, chum salmon, *Oncorhynchus keta*, Chinook salmon, *Oncorhynchus tshawytscha*, coho salmon, *Oncorhynchus kisutch*, Pacific herring, *Clupea pallasii*, Annual Management Report, AMR

INTRODUCTION

LOWER COOK INLET MANAGEMENT AREA COMMERCIAL SALMON AND HERRING FISHERIES

The Lower Cook Inlet (LCI) management area comprises waters of the Cook Inlet Area, south of the latitude of Anchor Point including the western shore of Cook Inlet south to Cape Douglas, and the eastern shore of Cook Inlet along the Kenai Peninsula to Cape Fairfield. This area is included in Area H and encompasses all coastal waters and inland drainages entering this area (Figure 1).

This salmon management area is divided into 5 districts that correspond to local geography and distribution of the 5 species of Pacific salmon (*Oncorhynchus* spp.) harvested by commercial fisheries (Figures 1–18). The management objective for all districts is the achievement of spawning escapement goals for major stocks, while allowing for orderly harvest of fish surplus to spawning requirements. In addition, Alaska Department of Fish and Game (ADF&G) follows regulatory guidelines to manage fisheries and allow private non-profit hatcheries to achieve cost recovery and broodstock objectives.

Two hatcheries currently contribute to the area's salmon fisheries. The Trail Lakes Hatchery (TLH) at Mile 29 of the Seward Highway produces sockeye *O. nerka* and coho salmon *O. kisutch* and is operated by Cook Inlet Aquaculture Association (CIAA). ADF&G operates the Fort Richardson hatchery near Anchorage that produces Chinook *O. tshawytscha* and coho salmon, which are released in the LCI area. In addition, the Tutka Bay Lagoon Hatchery began incubating pink salmon eggs in 2011 for release into Kachemak Bay.

Gear utilized in commercial salmon fisheries includes purse seine and set gillnet. Purse seine gear is permitted to fish in the Southern, Outer, Eastern, and Kamishak Bay districts. Set gillnet gear is permitted to fish in the Southern District. The Barren Islands District is closed by regulation to salmon harvest.

When Pacific herring *Clupea pallasii* spawning biomass allows for a commercial fishery in the Kamishak District, annual harvest level ranges are established in regulation that are divided between the commercial purse seine sac roe fishery in that district (90%) and the Shelikof Strait food and bait fishery (10%) in the Kodiak management area. Other districts in Lower Cook Inlet were closed to commercial herring harvest by the Alaska Board of Fisheries (BOF) in 2002 pending an increase in stock levels sufficient to ensure that a commercial herring fishery can be conducted in a sustainable manner.

OVERVIEW OF AREAWIDE SALMON AND HERRING FISHERIES

The 2012 Lower Cook Inlet management area commercial salmon harvest was 499,080 fish. The harvest was composed of 256,590 pink, 186,644 sockeye, 55,466 chum, 243 coho, and 137 Chinook salmon (Table 1; Figure 19). Hatchery returns of sockeye salmon in general were below forecast. Harvest of all 5 salmon species was below previous 10-year (2002–2011) harvest averages (Table 2). Approximately 76.8% of the harvest, 383,000 fish, was attributed to the common property fishery and 116,000 fish were attributed to hatchery cost recovery. An additional 8,735 sockeye and 32,184 pink salmon were harvested by hatcheries for broodstock (Appendices F2 and F3). Homepack harvest (482 salmon) accounted for less than 1% of the commercial harvest from LCI districts (Table 1). The 2012 preliminary exvessel value estimates by gear group from the common property fishery, both wild and enhanced salmon, are $1.1 million (89.5%) for purse seine, and $127,000 (10.5%) for set gillnet (Table 3; Figure 20). The average price per pound paid to fishermen was significantly above the previous 10-year average for all species (Table 4). The overall harvest values for both gear groups were below the previous 10-year harvest average (Table 5).

No commercial fisheries for herring occurred in 2012 because the spawning biomass was below the regulatory threshold of 6,000 tons (Figure 21).

SALMON SEASON SUMMARY BY DISTRICT

SOUTHERN DISTRICT

The Southern District includes the waters of eastern Cook Inlet south of Anchor Point and north of a line from Cape Elizabeth to Cape Douglas excluding waters east of a line from Point Adam to the tip of Cape Elizabeth (Figures 1–5). Commercial fishing in this district is restricted by regulation to waters along the south shore of Kachemak Bay from Chugachik Island near the terminus of Kachemak Bay to Point Bede approximately 4 miles south of the village of Nanwalek (English Bay). Purse seine gear is permitted in all open waters of this district during periods established by emergency order. Commercial set gillnet harvest is restricted to approximately 15 miles of shoreline in 5 subdistricts in this district. These are: east shore of Ismailof Island near Halibut Cove; waters surrounding McDonald Spit extending to Jakolof Bay; waters east of Barabara Point extending approximately 1.4 miles; waters along the west shore of outer Seldovia Bay; and waters of a portion of the south shore of Port Graham and English Bay. Any Cook Inlet Area (Area H) commercial set gillnet permit holder may register to fish in these areas. This however, would preclude that permit holder from fishing in the Northern and Upper

districts in Cook Inlet for the remainder of that calendar year. Other areas in the "Greater Cook Inlet Area," as defined in 5 AAC 21.345, may be fished in a given year by set gillnet permit holders fishing in the Southern District. The primary target species in this district for both purse seine and set gillnet permit holders are sockeye and pink salmon, although modest numbers of chum and coho salmon are also harvested. The major natural producer of sockeye salmon in this district is the English Bay River. Pink salmon historically have returned in large numbers to Humpy Creek, as well as numerous smaller streams in the Southern District. Hatchery releases began in 1972, when 241,000 coho and 34,000 Chinook salmon were released into Kasitsna Creek. This was followed by releases of chum and pink salmon into Halibut Cove Lagoon in 1974 and 1975. Sockeye salmon were released into Leisure Lake and Halibut Cove Lagoon in 1976 (Appendices F16, F17, F19, F21, and F22).

Preseason Outlook and Harvest Strategy

The 2012 commercial wild stock harvest forecast for the Southern District was 1,900 sockeye, and 62,000 pink salmon (Table 6). The enhanced sockeye salmon run to CIAA release sites was forecast to be 8,500 fish. No hatchery produced pink salmon would be returning to the Lower Cook Inlet Area in 2012 because the last release of this species at the Tutka Bay Hatchery facility was in 2004 and from Port Graham Hatchery in 2007 (Appendices F7 and F11).

As specified in regulation, the set gillnet fishing season in the Southern District opens on or after June 1 with two 48-hour periods per week specified unless modified by emergency order. The seine fishing season and fishing periods are opened and closed by emergency order depending on the available harvestable surplus of both wild and hatchery stock salmon. Given that no pink salmon would be returning to the Tutka Bay Lagoon Hatchery or the Port Graham Hatchery, and that all returning sockeye salmon were anticipated to be required to meet broodstock and cost recovery needs, subdistricts of the Southern District west of the China Poot Subdistrict were anticipated to remain closed to seine harvest. Given recent irregular returns of sockeye salmon to the Port Graham Subdistrict, the set gillnet commercial fishery would remain closed in this area until returns to the English Bay River weir met the minimum anticipated goal required to achieve the sustainable escapement goal (SEG) in addition to hatchery broodstock requirements. Hatchery harvest for this and previous seasons is discussed fully in *Cook Inlet Salmon Enhancement.*

Early season management of the Southern District, (excluding the Port Graham Subdistrict) is based on actual harvest versus anticipated harvest. Port Graham Subdistrict management is based on anticipated versus actual returns to the English Bay Lakes as measured by the English Bay River weir. Environmental conditions, fishing effort, and harvest consistency throughout the period are also taken into account. By early July, ground survey estimates of chum and early pink salmon escapement are also considered when scheduling commercial fishing periods. These surveys become primary tools in late July and August when management focus shifts to pink salmon in this district.

Season Summary

The total 2012 Southern District sockeye salmon commercial common property harvest was 16,656 fish with 10,260 (61.6%) harvested by the set gillnet fleet, and 6,396 (38.4%) harvested by seine permit holders (Appendices A1–A3). In addition 29,694 sockeye salmon were harvested from Tutka and China Poot bays by CIAA for cost recovery and 2,590 fish for broodstock purposes (Appendix F2). A total of 3,855 sockeye salmon passed the English Bay weir

(Appendices A4–A6). Of those, 411 were harvested by CIAA for broodstock. All fry from this harvest will be released into English Bay Lakes. The remaining 3,444 were wild stock escapement, below the minimum of the SEG of 6,000–13,500 for this system. Total pink salmon harvest was 186,075 fish with 175,770 (94.5%) harvested by the seine fleet and 10,305 harvested by set gillnet permit holders. In addition, CIAA harvested 8,140 wild stock pink salmon from Tutka Lagoon Creek for use as broodstock at the adjacent hatchery facility (Appendix F3). A total of 125 Chinook salmon were harvested in this area with 86 fish harvested by set gillnet permit holders and the remaining by seine permit holders. Also, a total of 1,366 chum salmon were harvested with 927 by set gillnet and 439 by seine permit holders. In addition, 77 coho salmon were landed late in the season with 33 by set gillnet and 44 by seine permit holders (Appendices A1 and A2; Table 1). Also, 63 sockeye, 4 Chinook, 61 coho, 31 chum and 323 pink salmon were retained by 7 commercial permit holders from this district for personal "homepack" use and not sold (Appendix E7; Table 1).

The first Southern District set gillnet commercial fishing period began at 6:00 AM on Friday, June 1, and was for 24 hours with 5 permits reporting deliveries. The harvest from this period was 429 sockeye, 4 Chinook and 15 chum salmon (Appendix A1). Processors paid approximately $2.05 per pound for sockeye, $0.35 per pound for chum and an unreported amount for Chinook salmon. During this period, waters of the Port Graham Subdistrict remained closed to commercial set gillnet harvest as a precautionary measure due to irregular sockeye salmon returns in recent years. The English Bay weir was in operation on June 1 and by June 9 had passed 76 sockeye salmon versus an anticipated SEG range of 463–1,042 fish for this period. This anticipated range is the SEG range apportioned out daily in accordance with the historic run timing that would be required to meet the SEG on July 31 (Appendices A4–A6; Table 7).

The second 48-hour period began the following Monday on June 4 at 6:00 AM and had 7 permit holders reporting 519 sockeye, 10 Chinook, and 6 chum salmon harvested. During the following period on Thursday, June 7, a total of 565 sockeye, 16 Chinook and 33 chum salmon were harvested by 6 permit holders (Appendix A1). English Bay weir passage remained slow during the week of June 10–16 with similar numbers passed (103) as during the previous week. Passage during this time was anticipated to have increased to 833–1,875 in order to fall within the final SEG range of 6,000–13,000 on July 31.

A commercial fishing period occurred beginning on Monday, June 11 in the Southern District excluding the Port Graham Subdistrict with 7 permit holders reporting a harvest of 7 Chinook, 451 sockeye and 75 chum salmon. Harvest from the following period beginning on Thursday, June 14 declined with 6 permit holders delivering 3 Chinook, 215 sockeye and 18 chum salmon (Appendix A1). While sockeye salmon passage at the English Bay weir increased slightly, it continued to occur well below the daily inriver target during this time. During the week of June 17–23, a total of 387 sockeye salmon were counted at the weir versus an anticipated count of 933–2,100 for this week. Cumulative passage on June 23 was 566 fish versus an anticipated cumulative count of 2,229–5,016 fish (Appendix A4). As a result of below anticipated sockeye salmon passage at the English Bay River weir, subsistence harvest in the Port Graham District was closed on June 22. Typically 34% of weir passage has occurred by this date. Sport harvest of salmon in the English Bay River closed 12 days later on July 4.

Commercial harvest outside of the Port Graham Subdistrict was lackluster during the week of June 17–23 with 8 permit holders reporting 16 Chinook, 1,067 sockeye, and 83 chum salmon harvested (Appendix A1).

Weir passage over the next week did show a marked increase with 1,297 fish counted from June 24–30 versus an anticipated passage of 1,770–3,982 during this time. Historically, 66% of the English Bay weir escapement has been counted as of June 30 (Appendix A4). Harvest during the week of June 24–30 was similar to the harvest in the previous week with 8 permit holders reporting 6 Chinook, 983 sockeye, 298 pink and 80 chum salmon landed (Appendix A1). In addition, a schedule of two 64 hour seine fishing periods was established this week in the China Poot and Halibut Cove subdistricts. Waters of the China Poot Special Harvest Area remained closed to common property harvest allowing CIAA access to returning Leisure Lake and Hazel Lake fish for cost recovery harvest (Figures 16 and 17; Appendix F2). While some seine permit holders did report prospecting in open areas and making test sets, no salmon were reported as having been harvested.

During the week of July 1–7 a total of 564 sockeye salmon were counted at the English Bay River weir. This is approximately half of the number of salmon (1,144) that were anticipated to have been counted during this week in order to meet the overall minimum SEG of 6,000 sockeye salmon. Total cumulative passage at the weir on Saturday, July 7, was 2,427 fish versus a minimum cumulative goal of 5,144 sockeye salmon (Appendix A4). Set gillnet harvest remained generally consistent with harvests from previous weeks with 8 permit holders reporting 10 Chinook, 1,087 sockeye, 159 pink and 130 chum salmon harvested during the two 48-hour periods that occurred. No seine harvest was reported from the Monday, July 2, 64-hour fishing period. Seine harvest from the Thursday fishing period is confidential because fewer than 3 permit holders reported deliveries (Appendix A1). On Thursday, July 5, residents of Port Graham contacted ADF&G and reported that sockeye salmon had been observed milling offshore of the Port Graham Hatchery (Figure 18). These were returns from the 112,000 fry released at that location in 2009. In response, ADF&G announced on July 5 that portions of the Port Graham Hatchery Special Harvest Area would open at 6:00 AM the following day to subsistence harvest.

Weir passage during statistical week 28 (July 8–14) improved slightly from the previous week with 804 sockeye salmon counted for a cumulative count of 2,427 fish. This was less than half of the anticipated SEG for this date. Commercial set gillnet harvest improved with regards to sockeye and pink salmon harvests with 8 permit holders reporting 1,787 and 1,784 of those species respectively harvested during this week (Appendix A1). Purse seine harvest from the Monday, July 9, and Thursday, July 12, 64-hour periods is confidential due to fewer than 3 permits reporting deliveries in each fishing period. Sockeye salmon passage at the English Bay River weir decreased markedly during statistical week 29 (July 15–21) with 284 fish counted. This was anticipated with the overall return historically 97% complete on July 15 and 99% on July 21. Consequently, subsistence harvest in the English Bay Section as well as waters in the Port Graham Section outside of the hatchery Special Harvest Area was reopened 7 days per week to subsistence salmon harvest on Monday, July 16. Commercial harvest for both set gillnet and purse seine permit holders remained strong during this week with 8 set gillnet permit holders reporting 1,887 sockeye, 5,164 pink and 251 chum salmon harvested (Appendix A1). In addition, 4 seine permit holders reported harvesting 3,273 sockeye, and 727 pink salmon (Appendix A4). Harvest from statistical week 30 (July 22–28) showed a decrease in sockeye harvest for both gear groups with 6 seine permit holders reporting 2,673 and 8 set gillnet permit holders reporting 899 harvested. Pink salmon harvest decreased during this week for set gillnet permit holders with 2,292 harvested, and increased for purse seine permit holders with 1,908 reported sold (Appendices A1 and A4). English Bay River weir counted 258 sockeye salmon during this week

with a cumulative count of 3,773 fish on July 28. This compares to a minimum SEG target of 5,999 for this date (Appendix A4). The weir was closed for the season on Tuesday, July 31 with a final count of 3,855 sockeye salmon. Set gillnet harvest from statistical week 31 (July 29–August 4) diminished substantially with the seasonal closure of the processor, "The Fish Factory." A total of 3 set gillnet permit holders reported harvesting 336 sockeye and 376 pink salmon. While the purse seine harvest also diminished during this week, this decline was likely in part the result of increased fishing opportunity and harvests in the Outer and Kamishak districts. In addition, some vessel operators also indicated they would be departing LCI for PWS and Kodiak salmon fisheries. Purse seine harvest from this week is confidential due to fewer than 3 permit holders reporting deliveries. Set gillnet harvest from statistical week 32 (August 5–11) is confidential. In addition, there were no further commercial set gillnet harvests reported for the 2012 season. In light of increasing pink salmon run entry, management changed from a strategy of two 64 hour periods per week, to three 16 hour periods per week on Monday, Wednesday and Friday. The primary motivation for this was to increase the windows of time that pink salmon may escape the fishery and enter streams and rivers. This would allow fish of intermediate timing to enter freshwater and contribute to the population. In addition, processor managers indicated that they could process more fish and produce a higher quality of product overall if ADF&G managers assigned more fishing periods of shorter duration. During the three 16-hour purse seine fishing periods that occurred in statistical week 32 (August 5–11), a total of 6 permit holders harvested 113,206 pink and 109 chum salmon (Appendix A2). The majority of these fish (109,115) were harvested from Seldovia Bay during the Wednesday and Friday periods.

Prior to the season, the seine fleet, processors and Cook Inlet Aquaculture Association agreed that all pink salmon harvested from the Port Graham Subdistrict would be sold live to processors. The buyer would then sell those fish to CIAA for use as broodstock at the Tutka Bay Lagoon Hatchery. Fry from these fish would then be released in Port Graham in 2013 and harvested from that location for either PGH broodstock, or CIAA cost recovery the following year. Harvests of Port Graham river fish began on August 10 and continued through August 22. A total of 24,758 pink salmon were purchased by CIAA from this location for use as broodstock (Appendices F2 and F27).

Seine harvest from week 33 (August 12–18) was less than half of the previous week with 8 permit holders reporting 52,364 pink salmon sold with the bulk of these fish (39,375) coming from the Seldovia District and a significant portion of the remainder from the Port Graham Subdistrict. Purse seine harvest from statistical week 34 (August 19–25) is confidential. There were no further purse seine deliveries following this from the Southern District in 2012 (Appendix A2). The 2012 salmon season was closed to purse seine harvest on September 16 and to set gillnet harvest on October 1 (Table 8).

The final escapement index value for Southern District pink salmon stocks based on ground surveys was 165,900 and was within the SEG range of 59,700–178,500 fish (Appendices A7–A9). Over the last 10 years, this value has ranged from a low of 41,300 in 2009, to a high of 418,700 in 2005; with a previous 10-year average index value of 175,900. Spawning escapement for chum salmon to the Port Graham River was 699 fish, as measured by ground surveys. This was below the SEG range of 1,450–4,800 fish for this system. Total sockeye salmon escapement past the English Bay weir was 3,855 fish. This was below the SEG of 6,000–13,500 fish. CIAA harvested 411 sockeye salmon from English Bay Lakes for use as broodstock that will be stocked back into this system as fry in 2013. The previous 10-year average spawning escapement

was 14,272 for this system (Appendix A6). In addition, 503 sockeye salmon were harvested in late July for broodstock from waters adjacent to the Port Graham Hatchery (Appendix F2).

The total 2012 Southern District common property commercial harvest of 16,656 sockeye salmon was above the anticipated harvest of 10,400 sockeye salmon. The pink salmon harvest (186,075) was above the anticipated harvest of 62,000 fish. While the sockeye harvest was below the previous 10-year average (109,157), the pink salmon harvest was more than ten times the previous 10-year harvest average (14,432; Appendix A3).

OUTER DISTRICT

The Outer District includes the waters of Lower Cook Inlet along the Kenai Peninsula south and east of a line from Point Adam to Cape Elizabeth, and east of the longitude of Cape Elizabeth to the longitude of Aligo Point which is 35 miles southwest of Seward (Figures 1, 2, and 6–9). Purse seine gear is permitted in all open waters of this district during periods established by emergency order. Historically, the primary target species are sockeye and pink salmon. The major natural producers of sockeye salmon in this district are Delight, Desire and Delusion Lakes. All 3 of these lakes were reported to have been glaciated in the early part of the 20th century with the McCarty Glacier terminus stretching from James Lagoon on the west to McCarty Lagoon on the east (Cook and Norris 1998, page 251). Pink salmon historically have returned in large numbers to Rocky Bay, Port Dick, and Windy Bay, as well as several smaller systems. In addition, modest numbers of chum salmon are regularly harvested from Dogfish Lagoon and Port Dick. There have been no regular releases of hatchery salmon into this district (Appendix F17).

Preseason Outlook and Harvest Strategy

The 2012 commercial wild stock harvest forecast for the Outer District was 16,700 sockeye, and 256,000 pink salmon (Table 6). As specified in regulation, the seine fishing season and periods are opened and closed by emergency order depending on the available harvestable surplus of wild stock salmon returning to spawning systems in the Outer District.

Historically, sockeye, pink, and chum salmon commercial harvest management in this district have relied heavily on aerial and ground surveys of major spawning systems for those species. Beginning in 1997, daily monitoring of sockeye salmon returning to Delight Lake has been conducted using a picket weir staffed by ADF&G field personnel. Typically sockeye salmon returns to this lake as well as Desire and Delusion Lakes peak in late July. Escapement into these lakes is frequently driven by rain events with weeks of residual passage followed by a significant spike in escapement as the result of increased water volume in the lake outflow. By early August, chum and pink salmon returns to this district typically increase to harvestable levels.

Season Summary

The total 2012 Outer District sockeye salmon commercial common property harvest was 77 fish (Appendices B1 and B2). A total of 8,616 sockeye salmon were counted at the Delight Lake weir in 2012. Due to an unexpected extreme weather event from July 11 to July 14, the weir was not operational and allowed unobserved fish passage. Aerial surveys of Delight Lake flown on June 28 counted 430 sockeye salmon prior to weir installation. An additional survey on July 3 counted 640 fish in the lake, and a survey flown on July 16 counted 3,670 in Delight Lake. This was 1,694 more than the cumulative weir count for July 16 of 1,976 fish that included fish observed on the June 28 aerial survey. This difference was parsed out over the 75 hours of lost weir time

for an adjusted cumulative count of 3,670 on July 16. Additionally, an aerial survey conducted shortly after the weir was removed documented 147 sockeye salmon downstream of the weir site. These fish were added to the final weir count on July 28 of 670 fish for an adjusted passage of 817 for that date. The total escapement estimate of 10,887 fish was within the SEG range of 7,500–17,650 fish (Appendices B3, B4, and B5). Total pink salmon harvest from this district was 69,359 fish and total chum salmon harvest was 51,313 fish (Appendices B1 and B2).

Commercial fishing in the Outer District began during statistical week 30 (July 22–28) with 3 Thursday–Friday 14-hour periods in the waters of McCarty Fjord near Delight Lake. Passage at the Delight Lake weir had been lagging in early July with dry weather reducing escapement to under the minimum daily SEG for that system. In addition to good aerial survey counts of the lake on July 16 that indicated significant run entry to the lake prior to the weir installation or while the weir was open during a storm, weir counts early in this week increased. On Monday, July 23 an announcement was made for daily 14-hour fishing periods, (8:00 AM–10:00 PM) Thursday through Saturday later in the week. Harvest from these periods was poor with only 73 sockeye salmon harvested by 3 permit holders. During statistical week 31 (July 29–August 4) portions of Dogfish Bay, Windy Bay, Rocky Bay, and Port Dick opened for 16-hour periods on Monday, Tuesday, Thursday, and Friday. A total of 29,952 pink and 37,607 chum salmon were harvested by 12 permit holders during this week. The majority of the chum salmon were harvested from Port Dick where Island Creek had an unusually large return of chum salmon. Ground surveyors on August 7 reported 8,345 chum and 19 pink salmon in Island Creek (Appendices B1, B3, B6, and B7).

Harvest during statistical week 32 (August 5–11) was similar to the previous week overall with 28,123 pink and 13,371 chum salmon harvested by 9 permit holders, with all of these fish harvested from either Port Dick or Taylor Bay. Harvests from statistical week 33 (August 12–18) and statistical week 34 (August 19–25) are confidential with fewer than 3 permit holders reporting deliveries. The last reported harvest from this district occurred on August 22. A ground survey conducted on August 17 reported 7,238 chum and 669 pink salmon in Island Creek. This is unusual for both of these species in this system where both chum and pink salmon have similar run timings with a midpoint occurring on approximately August 6. Additionally, chum salmon have an SEG range of 6,400–15,600 and pink salmon a SEG range of 7,200–28,300. As a result of below anticipated pink salmon escapement to Island Creek and only modest pink salmon escapement to head end creeks in Port Dick, commercial fishing opportunity remained restricted in those subdistricts for much of August. A September 7 ground survey documented 17,701 pink and 1,723 chum salmon in this system. Final escapement to Island Creek for these species was 20,079 pink and 14,863 chum salmon (Appendices B1 and B7).

This district closed for the 2012 season on September 16 (Table 8). A total of 15 permits reported deliveries from the Outer District in 2012 which was above the previous 10-year annual average of 10 permits. Total harvest from this district was 77 sockeye, 69,359 pink, and 51,313 chum salmon. Sockeye salmon harvest was less than the anticipated harvest of 16,700 fish, as was the pink salmon harvest when compared to the anticipated 256,000 fish. Chum salmon harvest was above the anticipated 36,800 fish. Sockeye and pink salmon harvests were below the previous 10-year averages of 14,558 and 422,428 fish. However, chum salmon harvest was more than double the previous 10-year average of 24,149 fish (Appendix B2).

The final escapement index value for Outer District pink salmon stocks, based on air and ground surveys, was 79,404 and was within the SEG range of 54,500–237,200 fish (Appendix B10).

Over the last 10 years, this value has ranged from a low of 174,300 in 2010, to a high of 731,000 in 2003 with a previous 10-year average index value of 373,400. Spawning escapement for chum salmon to this district was 35,270 and above the SEG of 12,850–34,600. Since 2002, this value has ranged from 12,400 to 43,400 and has a previous 10-year average value of 31,300 (Appendices B6–B10).

EASTERN DISTRICT

The Eastern District includes all state waters of the Gulf of Alaska between the longitudes of Aligo Point and Cape Fairfield (Figures 1, 2, and 10). Purse seine gear is permitted in all open waters of this district during periods established by emergency order. Historically, the primary target species have been sockeye and pink salmon with commercial harvests in modest numbers occurring sporadically (Appendix C2). Harvests of chum salmon were significant in this district during the 1980s when hatchery returns of this species to neighboring Prince William Sound were also robust. The major natural producers of sockeye salmon in this district have been Bear and Aialik lakes. Sockeye salmon production in Aialik Lake is a relatively recent event, with this lake having been covered by the Pedersen Glacier as late as 1909 (Cook and Norris 1998, pages 8 and 9). Beginning in 1990, CIAA released up to 3.4 million sockeye salmon juveniles into Bear Lake, in addition to 1.3 to 1.7 million annually into Resurrection Bay since 2008 (Appendix F17).

Pink salmon production in the Eastern District has been the result of natural spawning, excluding 1999 and 2000, where 24,000 and 48,000 pink salmon were released by CIAA into Resurrection Bay (Appendix F21). Significant pink salmon producers in this district are Salmon Creek with a 10-year (1980–1989) average escapement of 4,500 pink salmon and Bear Creek with a 10-year (1997–2006) average escapement of 11,800 fish. In addition, Thumb Cove and Humpy Cove collectively produced an average of 10,500 pink salmon per year from 1997 to 2006 (Appendix C11). Ground surveys of this area in recent years have been curtailed due to budgetary constraints combined with historic low returns to this area.

Coho salmon production has been the subject of enhancement efforts since the early 1960s in Resurrection Bay. Historically, commercial harvest of this species in the Eastern District has been minimal (Appendix C2). In 1966, commercial harvest of coho salmon north of a line from Cape Resurrection to Callisto Head was prohibited, and in 1968 this regulatory line was moved south to its current position at Aialik Cape. Beginning in 1985 with the start of hatchery releases of Chinook salmon in the Seward area (Appendix F15), commercial harvest of this species north of a line from Cape Resurrection to Aialik Cape was prohibited. In addition, since 1989 the *Resurrection Bay Salmon Management Plan* (5 AAC 21.376) has directed commercial fishery managers to conduct those fisheries in a manner that does not interfere with recreational fisheries for enhanced Chinook and coho salmon in Resurrection Bay. Consequently, the majority of coho salmon in this area have been harvested by sport users, and returns of pink and chum salmon have eluded significant commercial fishing pressure. Since 1956, the Seward Chamber of Commerce has conducted a fishing derby that focuses on coho salmon returning to local spawning systems at the head of Resurrection Bay. Beginning in 1990, coho salmon harvested by participants in the derby are sold commercially by the Chamber of Commerce to a local processor as a fund raiser for that organization. These sales are listed separately from commercial common property harvests in Appendix C2.

Preseason Outlook and Harvest Strategy

The 2012 commercial wild stock harvest forecast for the Eastern District was 25,700 sockeye salmon (Table 6). The enhanced sockeye salmon run to CIAA release sites was forecast to be 216,000 fish. As specified in regulation, the seine fishing season and fishing periods are opened and closed by emergency order depending on the available harvestable surplus of both wild stock and enhanced salmon returning to the Eastern District. CIAA announced preseason that 130,500 of the sockeye salmon anticipated to return to Resurrection Bay release sites would be required to meet corporate cost recovery, as well as broodstock needs. Early season management of the Eastern District is based on actual harvest versus anticipated harvest, as well as passage at the Bear Creek weir, which is located 5 miles (8 km) from saltwater. Beginning in July, management is based on aerial surveys of sockeye salmon returns to Aialik Lake. Historically, returns of pink salmon to this district have been below the level required to support consistent and sustainable commercial harvests.

Season Summary

Due to a smaller than anticipated sockeye salmon return to CIAA release sites in Resurrection Bay, and modest wild stock sockeye and pink salmon returns there were no common property fishery openings in 2012 in this district (Appendices C1 and C2). Returning enhanced sockeye salmon were harvested by cost recovery seine vessels in Resurrection Bay for CIAA, as well as at the Bear Creek weir.

The Eastern District was initially opened on Monday, May 21 to cost recovery harvest 7 days per week. Cumulative harvest through Sunday, May 29 was 5,842 sockeye salmon. (Appendix F2) This compares to a cumulative harvest of 39,180 fish for this date last year. Harvest remained slow, but moderately steady with several thousand fish harvested daily with a final cost recovery harvest of 82,292 from Resurrection Bay (Appendix F2). Sockeye salmon in excess of lake spawning and hatchery broodstock needs were also harvested and sold at the Bear Creek weir with 1,317 taken between July 4 and July 25. An additional 12,459 sockeye salmon were passed into Bear Lake where 4,428 were collected by CIAA using a beach seine for hatchery broodstock. The remaining 8,031 were allowed to spawn naturally in Bear Lake and thereby meet the SEG range of 700–8,300 fish for this system (Appendices C3, C4, and C7). A total of 309 coho, 55 pink salmon and 88 Dolly Varden char (*Salvelinus malma*) were passed over the weir. An additional 327 coho salmon were harvested at the weir for CIAA broodstock, 68 were harvested for broodstock by ADF&G for use at one of ADF&G's Anchorage hatcheries. In addition, 31 excess males that were donated to a dog musher (Appendices C5–C7). Also, 4,065 pink, 1 chum salmon and 3,223 Dolly Varden char were counted in Bear Creek between the weir and the Seward Highway during a ground survey on August 30 (Appendix C9).

Aerial surveys of Aialik Lake were conducted; weather permitting, beginning on July 16 with the last survey flown on August 10. The peak aerial survey count of 2,140 was observed on a survey flown on August 3 and was below the SEG of 3,700–8,000 fish. Conditions on this survey were poor with high turbidity in the lake preventing good observation. As a result of this and recent mediocre returns to this system, no commercial fishing periods were announced targeting sockeye salmon returns to Aialik Lake in 2012 (Appendices C8 and C9). A total of 1,400 coho salmon were harvested by sport users and sold to local processors by the Seward Chamber of Commerce during the annual silver salmon derby (Appendix C2).

The final spawning escapement for Bear Lake sockeye salmon stocks was 8,031 fish. This compares to a previous 10-year average escapement of 9,129 fish and is above the SEG of 700–8,300 fish for this system (Appendix C7). Coho spawning escapement to Bear Lake was 315 fish, which was below the previous 10-year average spawning escapement of 504 fish (Appendices C5–C7). Aialik Lake escapement (2,140) was below the previous 10-year average escapement (5,317 fish) and below the SEG of 3,700–8,000 for this system (Appendices C8, C9, and C11). In 2012, there was 1 aircraft survey of Day Harbor pink and chum salmon systems on the east side of Resurrection Bay and 2 ground surveys of Bear Creek and the Salmon River near Seward. Consistent ground surveys of many pink and chum salmon index streams in the eastern portion of this district have not been implemented since 2006 due to budgetary restrictions.

KAMISHAK BAY DISTRICT

The Kamishak Bay District includes all state waters on the west side of Cook Inlet south of the latitude of Anchor Point and north of a line from Cape Douglas to Elizabeth Island (Figures 1, 2, and 11–13). Purse seine gear is permitted in all open waters of this district during periods established by emergency order. Historically, the primary naturally occurring target species are chum and pink salmon. From 1959 through 1980, the average harvest was 31,000 pink, 34,000 chum and 2,000 sockeye salmon. However, after the release of hatchery sockeye salmon to systems in this district, this species became a major component of the harvest. From 1981 to 2010, the average harvest was 67,000 pink, 52,000 chum and 55,000 sockeye salmon. In addition to sockeye releases, pink salmon were also released from 1980 to 1983, (Appendices F17 and F21). The major natural producers of pink salmon in this district have been the Bruin Bay River, Sunday Creek and Brown's Peak Creek. Major chum salmon producers have been the Big Kamishak and Little Kamishak rivers as well as Cottonwood Creek. In addition, there are numerous other rivers and streams that periodically have had significant pink and chum salmon returns.

Prior to 1981, Mikfik Lake was the largest single producer of sockeye salmon in this district with an average run of 6,600 from 1970 to 1980. The second largest producer, Chenik Lake had an average run of 3,800 during this period with Amekdedori Creek and Kamishak rivers having average runs of 1,200 and 1,300 sockeye salmon, respectively. Returns to Chenik Lake increased significantly overall after enhancement (1978–1996) with average harvests of 55,900 per year during this period (Appendix F24). However, there were years where escapement dropped below 1,000 fish; possibly as a result of over aggressive stocking resulting in a documented infectious hematopoietic necrosis outbreak. Average annual escapement to Mikfik Lake from 1981 to 2010 was 11,100 fish, with escapement to Chenik Lake at 8,700 fish and escapement to nearby Amekdedori Creek and Kamishak rivers increasing slightly to 2,700 and 1,800 respectively. Kirschner Lake has been stocked regularly with sockeye salmon since 1987. In addition, hatchery sockeye salmon were also released from 1986 to 1996 at several other smaller systems in this district (Appendix F17). Specific information regarding hatchery releases in this district is located in *Cook Inlet Salmon Enhancement.*

Preseason Outlook and Harvest Strategy

The 2012 commercial wild stock harvest forecast for the Kamishak Bay District was 98,300 sockeye salmon (Appendices D1 and D2). A commercial pink salmon harvest was not anticipated (Table 6). The enhanced CIAA sockeye salmon run to Kirschner Lake was forecast to be 10,200 fish (Appendix F1). As specified in regulation, the fishing season in the Kamishak

Bay District opens from June 1 until closed by emergency order. Historically, this district has been opened for extended 7 day periods, with specific areas closed as needed by emergency order to address escapement shortfalls, or to allow for hatchery cost recovery harvest. CIAA initially announced that all of the 10,200 sockeye salmon anticipated to return to the Kirschner Lake release site would be required to meet corporate cost recovery as well as possibly broodstock needs. Early season management of the Kamishak Bay District is based on actual harvest versus anticipated harvest as well as passage at the Mikfik and Chenik Lake video monitoring sites. In addition, aerial surveys are flown weather permitting to monitor sockeye and chum salmon escapement to index streams, as well as recover recording media from video monitoring sites for inseason review in the Homer office. Beginning in July, management is also based on aerial surveys of pink and chum salmon returns to spawning systems in this district. Surveys are also flown in late August and September to monitor progress of coho salmon returns to select streams in this district.

Season Summary

The total 2012 Kamishak Bay District commercial common property harvest was 55,255 sockeye, 2,425 chum, and 61 pink salmon harvested by 6 seine permit holders (Appendix D1). Given the lackluster success of cost recovery in the Eastern District, commercial common property harvest in the Kirschner Lake SHA was closed to allow for corporate harvest of this return.

The Kamishak Bay District was opened to commercial common property harvest on Friday, June 1. There was no harvest reported during June. Harvest from the sixth fishing period (July 2–8) by 5 permit holders was 53,929 sockeye salmon, all of which were caught in the Chenik Subdistrict. Harvest from the following weeks fishing period (July 9–15) is confidential due to fewer than 3 permit holders reporting deliveries. Harvest effort during the eighth fishing period (July 16–22) shifted focus from the Chenik Subdistrict to the Kamishak River Subdistrict where 5 permit holders reported harvesting 61 pink and 2,425 chum salmon. There was no further harvest from this district reported in 2012 (Appendix D2).

Aerial surveys of the Kirschner Lake SHA documented the following levels of returning hatchery sockeye salmon:

Date	Number of fish
7/10	0
7/18	410
7/27	300
7/31	900
8/8	1,300
8/11	1,200

On July 24 a CIAA cost recovery vessel harvested 1,260 sockeye salmon from this area. On August 12 this vessel attempted to harvest the remaining fish, however was unable to catch any. These fish were likely of Hidden Lake stock released in 2008 (BY07). The 2012 commercial fishing season closed at 10:00 PM on Friday, September 9 (Table 8; Appendix D1).

Video monitoring of returning sockeye salmon to Chenik and Mikfik Lakes occurred with minimal technical difficulty in 2012. A total of 16,505 were documented in Chenik Lake from June 24–August 7 with the camera operational continuously from June 11–August 8 (Appendices

D3 and D5). This was above the SEG range of 3,500–14,000 fish, and above the previous 10-year average of 13,633 sockeye salmon (Appendix D7). A total of 3,131 sockeye salmon were counted at Mikfik Lake from June 12 to August 8 with the camera operated continuously from June 11 to August 9 (Appendices D4 and D6). This was below the SEG range of 6,300–12,150 and below the previous 10-year average of 11,371 fish (Appendix D7). Aerial surveys of the lower portion of Mikfik Creek observed significant numbers of sockeye salmon on several occasions as well as the constant presence of numerous brown bears (*Ursus arctos horribilus*) catching these fish.

The peak aerial survey count for Amekdedori Creek was 770 sockeye salmon. This was below the SEG range of 1,250–2,600 fish and below the 10-year average of 3,800 fish. Overall, 35,948 pink salmon were observed in index streams in the Kamishak Bay District (Appendices D8 and D9). This is within the SEG range of 25,950–203,400 fish for the 3 index systems (Bruin River, Sunday Creek, Brown's Peak Creek) in this district combined and is also below the previous 10-year average return of 597,000 fish for these combined index streams (Appendix D11). Chum salmon escapement into Kamishak Bay District index streams was also down with 79,112 fish counted in the 7 index streams combined (Appendix D8). This compares to a combined SEG range of 65,550–141,600 chum salmon. The previous 10-year average escapement for this species into these streams is 131,000 fish (Appendix D11).

The total 2012 Kamishak Bay District commercial common property harvest of 55,255 sockeye salmon was below the anticipated harvest of 98,300 wild sockeye and below the previous 10-year average harvest of 64,961 sockeye salmon. Total pink salmon harvest from this district was 61 fish versus an anticipated harvest of no fish. The previous 10-year average harvest was 70,776 pink salmon. Total chum salmon harvest was 2,425, down from the previous 10-year average of 56,663 fish (Appendix D2). In addition 1,260 sockeye salmon were harvested by CIAA for cost recovery purposes from the Kirschner Lake SHA.

LOWER COOK INLET SUBSISTENCE, PERSONAL USE AND HOMEPACK COMMERCIAL FISHERIES

The Cook Inlet Subsistence Management Area (5 AAC 01.550) includes all state waters between Cape Douglas and Cape Fairfield, excluding waters of the upper Susitna River (5 AAC 01.550). Superimposed on this area is the Anchorage-Matsu-Kenai Nonsubsistence Area described in 5 AAC 99.015(a)(3). This area comprises over 90% of the area described in 5 AAC 01.550 and precludes the subsistence harvest of fish and game in the nonsubsistence area because residents in those areas do not meet the customary and traditional use criteria, as defined by the Alaska Board of Fisheries in 5 AAC 99.010(b). However, there are 2 areas within defined Cook Inlet Subsistence Management Area that either do meet these criteria, or are federal parks. These areas include the southwest tip of the Kenai Peninsula including the towns of Seldovia, Port Graham, and Nanwalek, as well as portions of the western shore of upper Cook Inlet near Tyonek. In addition, subsistence harvest of non-aquatic resources is permitted within the boundaries of the Kenai Fjords National Park. However, in order to provide harvest opportunity in addition to sport fishing to urban residents of these general areas, the Alaska Board of Fisheries has defined 2 personal use salmon fisheries in Lower Cook Inlet, as well as defined seasons and gear types for personal use herring and smelt fisheries. In addition, both resident and non-resident commercial permit holders historically have been allowed to retain legally harvested fish from their commercial catch for their own use as homepacks.

NANWALEK/PORT GRAHAM SUBSISTENCE FISHERY

Subsistence fishing is allowed in the Port Graham and Koyuktolik (Dogfish Bay) subdistricts from April 1 through September 30, and in the Port Chatham and Windy Bay subdistricts from April 1 through August 1. Extended fishing periods in these areas are defined in regulation as from 10:00 PM Thursday to 10:00 AM Wednesday (132 hours) each week. Set gillnets up to 35 fathoms in length, 6 inches in mesh size and 45 meshes in depth may be used. This fishery has been specifically administered by ADF&G staff since the late 1970s. However, local dependence by residents on returning salmon to meet basic nutritional needs has been identified since pre-statehood (Stanek 1985). Fishing in these areas has tended to focus primarily on salmon returning to English Bay Lakes as well as to the Port Graham River. Over the last 20 years, sockeye salmon returns to English Bay Lakes have been significantly depressed. This has reduced both local commercial, as well as, subsistence salmon harvests. Partially in response to this at the November 2001 Alaska Board of Fisheries meeting, waters of the Port Chatham and Windy Bay subdistricts were added to regulation as areas available for salmon harvest to subsistence permit holders. No subsistence fishing effort or harvest has occurred in either of these areas since they were first opened to subsistence fishing in 2002. Historically, separate permits have been issued to residents of Port Graham (population 171), and Nanwalek (population 177). Permission to fish in Koyuktolik, Port Chatham, Port Graham and Windy Bay is specified on both of these permits. Historically, there has been no requirement on these permits for the subsistence user to report from which harvest areas some or all of the harvest was caught. There are no bag or annual possession limits for subsistence salmon in the Port Graham, Port Chatham, Windy Bay or Koyuktulik (Dogfish Bay) subdistricts.

In 2012, 60 permits were sent to the Nanwalek Traditional Council and 30 permits were sent to the Port Graham Village Council. In addition, 10 permits were sent to the Anchorage ADF&G office, and 10 permits were kept at the Homer ADF&G office for distribution. All permits were serially numbered and printed on Rite in the Rain paper. Representatives from the village councils were instructed to disperse these permits to residents of these villages that intended to harvest salmon for subsistence use. In previous years, a village resident was paid to disperse and collect permits from both of these communities. In addition permits were not actively distributed from ADF&G offices until this year.

In 2012, the sockeye salmon escapement count of 3,444 fish to English Bay Lakes was at the lowest level documented by the weir during both the 1927–1941 and 1993–2011 periods of operation (Appendix A6). The subsistence salmon fishery was closed for 24 days (June 22–July 15) in the English Bay section and 14 days (June 22–July 5) in the Port Graham section due to below anticipated passage at the weir. Portions of the Port Graham section opened earlier than the English Bay Section due to modest returns of hatchery produced sockeye salmon that returned to the Port Graham Hatchery SHA.

In 2012, only 1 subsistence permit was returned from Nanwalek (English Bay). This permit holder reported a total harvest of 300 sockeye, 400 coho, 200 pink, and 5 chum salmon (Appendix E2). This was below the previous 10-year average of 34 permits reporting 56 Chinook, 3,577 sockeye, 1,010 coho, 1,622 pink, and 223 chum salmon. A total of 7 Port Graham permits were returned with a total harvest of 24 Chinook, 661 sockeye, 14 coho, 282 pink, and 26 chum salmon reported (Appendix E1). This was below the previous 10-year average of 25 permits reporting 158 Chinook, 709 sockeye, 144 coho, 147 pink, and 77 chum salmon. In

addition, 1 permit was issued to a resident of Cooper Landing and was returned as having "not fished." Also, 1 permit was issued to an Anchorage resident and not returned, and 1 permit was issued to a Fairbanks resident and not returned. Residents of Port Graham reported that fewer people participated in the subsistence fishery from that community due to the price of fuel and the 2 week fishing closure. In addition, sockeye salmon in the Port Graham section were reported to be travelling further off shore and unreachable with 35 fathom set gillnets.

The combined total harvest from both the English Bay and Port Graham Sections was 1,912 salmon and was below the previous 10-year average of 7,723 salmon. This was also below the customary and traditional use board finding of 4,800–7,200 salmon (5 AAC 01.566) for the Port Graham, Koyuktolik, Port Chatham, and Windy Bay subdistricts.

SELDOVIA SUBSISTENCE FISHERY

There are 2 subsistence fishing seasons specified in regulation that take place each year in the waters of the Seldovia Bay Subdistrict. The first season consists of two 48-hour periods each week beginning at 6:00 AM on Monday and Thursday from April 1 through May 30. The second season consists of two 36-hour periods on the first 2 weekends in August. Legal gear is set gillnets up to 35 fathoms in length, 6 inches in mesh size and 45 meshes in depth. This fishery was created in 1995 by the Alaska Board of Fisheries. BOF intent was for this fishery to avoid harvesting hatchery Chinook salmon that have been released annually into the Seldovia Harbor since 1987 (Appendix F15). These releases are funded under the federal Dingle-Johnson Sport Fish Restoration Fund. Allowing a subsistence harvest on these Chinook salmon would violate the intent of this federal program. Furthermore, there have been no significant historic returns of Chinook salmon to the Seldovia area (or other locations in LCI). The customary and traditional use worksheet submitted to the BOF in 2005 identified Chinook salmon as being the least important of the 5 species to residents of Seldovia as far as traditional subsistence use was concerned. In addition to structuring the timing of the fishery to avoid this hatchery return, the BOF also imposed an annual possession limit of 20 Chinook salmon per household for this species. There are no bag or annual possession limits for other salmon species in the Seldovia subsistence fishery. A permit issued by ADF&G is required prior to setting gear, and catches are recorded on the permit and also reported to the Homer area office inseason so that cumulative harvest totals can be monitored and coho deducted from the fall personal use coho salmon fishery guideline harvest level specified in 5 AAC 77.549(a).

In 2012, as has been done in past years, 30 permits for the spring fishery were sent to the Seldovia Harbormaster's office, in addition to 10 permits retained at the Homer ADF&G office and 10 that were sent to the Anchorage ADF&G office. An additional 12 permits for the fall fishery were sent to the Harbormasters office and 5 permits were kept at both the Anchorage and Homer ADF&G offices. All permits were serially numbered and printed on Rite in the Rain paper. The Seldovia Harbormaster was instructed to have Alaska residents complete the name and address portion of the permits while under witness of a harbormaster employee and then have that employee fax a copy of that completed permit back to the Homer ADF&G office.

In 2012, out of 16 permits dispersed to Alaska residents for the early season, 6 permits were returned. Only 2 of the returned permits reported having fished. These 2 permits reported harvesting 3 Chinook and 26 sockeye salmon. This compares to a previous 10 year average of 13 permits issued, 10 permits returned, and 5 reporting not fishing with a harvest of 38 Chinook, 65 sockeye, and 7 chum salmon by the remaining 5 permits. Four permits were issued for the

August weekend seasons with only 1 permit returned. This permit holder reported 3 sockeye and 20 pink salmon harvested. This compares to a previous 10 year average of 3 permits issued, 3 permits returned, and 1 reporting not fishing with a harvest of 26 sockeye, 12 coho, 42 pink and 10 chum salmon (Appendix E3). Total harvest for both the early and late season was 52 salmon versus a previous 10-year harvest average of 201 salmon. Currently, there is no customary and traditional allocation for this subsistence fishery as there are for other LCI subsistence fisheries (5 AAC 01.566(d)).

CHINA POOT PERSONAL USE DIP NET AND PERSONAL USE COHO FISHERIES

There are 2 personal use fisheries currently specified in regulation in Lower Cook Inlet. These are the China Poot personal use dip net fishery and the Southern District personal use coho salmon fishery.

The China Poot dip net fishery dates back to 1980 when returns from the 1976 releases of sockeye salmon began (Appendices F17 and F23). Further information regarding these releases may be found in the section, *Cook Inlet Salmon Enhancement* in this report. This fishery is managed by ADF&G, Division of Sport Fish. Prior to 1996, harvest from this fishery was documented as part of the *Statewide Harvest Survey*. Currently, there are no reporting requirements to monitor overall harvest from this fishery. The daily bag and possession limit for this fishery is 6 sockeye salmon.

The personal use coho fishery in the Southern District dates back prior to statehood, when it was considered a subsistence fishery. From 1986 through 1995, various court rulings converted it to a personal use fishery and then back to a subsistence fishery. The most recent court action in late 1994 reestablished the boundaries of the Anchorage Nonsubsistence Area (5 AAC 99.015(a)(3)) that put the location of this fishery within the nonsubsistence area, thereby invalidating the subsistence regulations that governed this fishery at that time (Figure 14). As a result, the Alaska Board of Fisheries early in 1995 readopted personal use regulations governing this fishery into permanent regulation and rescinded subsistence regulatory language pertaining to this fishery. Regulations pertaining to this fishery are found in 5 AAC 77.549 *Personal Use Coho Salmon Fishery Management Plan*. These specify a guideline harvest range of 1,000–2,000 coho salmon. Additionally, coho salmon caught in the Seldovia subsistence fishery described in 5 AAC 01.560(b)(8)(B) are deducted from this annual harvest goal. Coho salmon targeted in this fishery have shifted from exclusively wild stock fish to include hatchery coho salmon which have periodically been stocked in several locations in Kachemak Bay since the mid-1970s (Appendix F19). Since the late 1980s, releases of 100,000–325,000 coho salmon smolt annually into the Nick Dudiak Fishing Lagoon, located on the Homer Spit, have periodically contributed significantly to the personal use harvest (Figure 15). Samples taken in 1999 and 2000 of coho salmon caught in this fishery from sites on the Homer Spit adjacent to the Nick Dudiak Fishing Lagoon documented a hatchery component of 81 and 90% for these 2 years (Szarzi et al. 2010). However, as a result of decreased releases of late season coho salmon in the Nick Dudiak Fishing Lagoon, harvest effort has shifted away from the Homer Spit to waters between Fritz Creek and Swift Creek (Appendix E6; Figure 14). The wild stock components of this return are primarily bound for the Fox River drainage at the head of Kachemak Bay. However there are numerous smaller returns of coho salmon scattered throughout Kachemak Bay.

In addition to holding a valid sport fishing license and being an Alaska resident, participants in the personal use coho salmon fishery must obtain a fishery-specific permit from the Homer ADF&G office to participate. Beginning in 1999, ADF&G has requested that permit holders voluntarily report their harvest daily in order to facilitate inseason management and assure that the 1,000–2,000 guideline harvest level specified in 5 AAC 77.549 is not exceeded. Harvest during the 2012 season was 1,471 coho, 137 sockeye, 5 Chinook, 275 pink and 6 chum salmon with 98 permits issued, 95 permits returned and 69 actively fished (Appendix E4). As in recent years, the bulk of the coho salmon harvest was taken near the head of Kachemak Bay with 1,202 coho salmon harvested by 42 permit holders on the north shore between Fritz and Swift creeks, and on the south shore 140 fish were harvested by 19 permit holders between Bear Cove and Neptune Bay. Given their distance from the Nick Dudiak Fishing Lagoon, it is unlikely that there is a significant percentage of hatchery releases in this harvest. However, 11 permit holders harvested 72 coho salmon on the east side of the Homer Spit adjacent to the Fishing Lagoon. Some portion of this harvest may have been of hatchery origin (Appendix E6). Of the 98 permits issued, 77% were held by Homer area residents, 7% by Anchorage area residents, and the remaining 16% by residents of Anchor Point, Seldovia and other locations on the Kenai Peninsula (Appendices E5 and E8).

COMMERCIAL HOMEPACK

Historically, both resident and nonresident commercial permit holders have been allowed to retain legally taken fish from their commercial catch for their own use. In 2007, the Alaska Board of Fisheries appended 5 AAC 39.130(c)(10) requiring that the number of fish of any species retained by a commercial fisherman for their own use be documented on a fish ticket. Previously these fish had been voluntarily noted on fish tickets by some permit holders.

In 2012, there were 7 permit holders that reported retaining 4 Chinook, 63 sockeye, 61 coho, 323 pink, and 31 chum salmon for their own personal use (Appendix E7). Of those, 4 permit holders were Homer residents, and 3 were residents of Seldovia (Appendix E8).

COOK INLET SALMON ENHANCEMENT

Fisheries enhancement and rehabilitation in Alaska began in earnest in the early 1970s with the creation by the Alaska State Legislature in 1971 of the Fisheries Rehabilitation, Enhancement and Development Division to help build and stabilize fisheries production. Prior to and during this time there were sporadic releases of coho and Chinook salmon to systems in Resurrection Bay as well as at Kasitsna Bay near Homer. These fish were produced at ADF&G hatcheries in Anchorage on Ship Creek as well as at the Big Lake and Fire Lake hatcheries (Appendices F12–F14).

In 1974, the Alaska legislature passed the Private Non-Profit Hatchery Act, this stated that,

> "It is the intent of this act to authorize the private ownership of salmon hatcheries by qualified non-profit corporations for the purpose of contributing by artificial means to the rehabilitation of the state's depleted and depressed salmon fishery. The program shall be operated without adversely affecting natural stocks of fish in the state and under a policy of management which allows reasonable segregation of returning hatchery reared salmon from naturally occurring stocks."

Shortly thereafter in 1976 Cook Inlet Aquaculture Association (CIAA) was created. Tutka Bay Lagoon Hatchery (TBLH) was built by the state of Alaska in 1977, and began rearing sockeye and pink salmon that year (Appendix F7). In 1983, the Trail Lakes Hatchery (TLH) began operations producing sockeye and coho salmon (Appendix F8). Also in 1983, the Eklutna Hatchery began producing chum and coho salmon (Appendix F9). The Crooked Creek Hatchery (CCH) was built in 1975 and began producing sockeye and Chinook salmon 2 years later with coho salmon production starting in 1979 (Appendix F10). In 1991, residents of Port Graham formed the Port Graham Hatchery Corporation (PGHC) and began producing sockeye and pink salmon at a converted cannery in the village of Port Graham (Appendix F11).

CIAA and PGHC are among 13 non-profit corporations in the State of Alaska that maintain private hatcheries that have the capacity to produce salmon for harvest in common property fisheries. CIAA is the second largest producer of hatchery sockeye salmon in Alaska and the fourth largest producer of pink salmon with PGHC being potentially the fifth largest potential producer of this species in terms of egg capacity.

Recent permitted egg capacities, in millions of eggs, for the 9 largest aquaculture associations in Alaska are listed below:

Hatchery non-profit corporation	Chinook salmon	sockeye salmon	coho salmon	pink salmon	chum salmon	total
PWS Aquaculture Corp. (PWSAC)	4.00	49.15	4.00	497.00	165.00	719.15
Kodiak Region Aquaculture Assn. (KRAA)	0.45	20.60	2.80	215.00	28.00	266.85
Valdez Fishery Development Assn. (VFDA)	0.30		2.00	230.00		232.30
Douglas Island Pink and Chum (DIPAC)	1.25	33.50	1.65	50.00	125.00	211.40
Southern SE Region Aquaculture Assn. (SSRAA)	3.50	2.70	14.50		172.00	192.70
Northern SE Region Aquaculture Assn. (NSRAA)	9.00	2.00	11.64	0.30	175.80	198.74
Cook Inlet Aquaculture Assn. (CIAA)	4.00	48.66	6.16	125.00		183.82
Armstrong Keta Inc. (AKI)	2.00		5.00	85.00	30.00	122.00
Port Graham Hatchery Corp. (PGHC)		1.35		110.00		111.35
all others	0.90	5.00	6.13	23.00	75.00	110.03
Statewide egg capacity totals (millions)	25.40	162.96	53.88	1,335.30	770.80	2,348.34

In 2012, CIAA contributed 67.1% (125,300) of the total Lower Cook Inlet sockeye salmon harvest of 186,600 fish (Table 1; Appendix F1). Prior to the cessation of pink salmon production at TBLH in 2004 and at PGH in 2007, these 2 hatchery corporations combined produced up to 2.6 million returning pink salmon (1995), which was 91.6% of the total pink salmon harvest for that year in Lower Cook Inlet (Appendices F6, F7, F11, and Table 2). In addition to sockeye and pink salmon releases, CIAA also has released an average of 731,000 coho salmon over the last 10 years (Appendices F19 and F20) and the Ship Creek Hatchery Complex (operated by ADF&G) has released an average of 570,000 Chinook salmon into LCI where both of these species are primarily harvested by sport users (Appendices F8 and F12).

TUTKA BAY LAGOON HATCHERY

Tutka Bay Lagoon Hatchery (TBLH) is located in Tutka Bay, approximately 23 kilometers (14 miles) south of Homer (Figure 17). TBLH, constructed in 1976, is owned by ADF&G and has been operated by CIAA under contract since 1992. The facility was originally constructed as a pink and sockeye salmon hatchery. However, it also produced chum salmon from 1979 to 1990. Water for hatchery operations is supplied by Tutka Lagoon Creek. Permitted water capacity is 1,200 gpm, with a current usage of 1,080 gpm. The TBLH had an initial capacity of

10 million pink salmon eggs, however major renovation work in 1993–1994 increased the physical capacity to 150 million eggs. In addition, TBLH has a sockeye salmon egg physical capacity of 1.8 million as well as raceways to accommodate the resulting fry. However, problems with infectious hematopoietic necrosis virus outbreaks have plagued this facility and made for erratic releases from 1977 to 1999 when this species was incubated (Appendix F7). Sockeye salmon produced at TBLH were released into Leisure Lake (1977), Tustumena Lake (1978), English Bay (1990), and Tutka Bay (1996, 1997, and 1999). Fish released into Tutka Bay in 1996, 1997 and 1999 were of Packers Lake stock. Beginning in 2005, sockeye salmon were incubated and reared at the Trail Lakes Hatchery using Hidden Lake broodstock and were transferred to Tutka Bay for imprinting and release, which resulted in better survival rates. Pink salmon were raised consistently at this facility from 1977 to 2004 with releases ranging in size from 318,000 (1977) to 105 million (1996) with an average release of 42.4 million fish. All pink salmon broodstock was derived locally from the adjacent Tutka Lagoon Creek. Pink salmon were released not only from the hatchery site directly, but also remote released from Halibut Cove Lagoon (1975, 1977, 1986–1992), the Paint River (1980–1983), the Homer Spit (1987–1992) and also Ingram Creek (1987–1990) in Turnagain Arm (Appendices F7 and F21). Chum salmon were reared and released on site from 1979 to 1990 in numbers ranging from 7,992 (1981) to 3.2 million in 1998 with an average release of 841,000 fish. The original broodstock for the chum salmon return was taken from Port Dick Creek (Appendices F7 and F22).

In 2012, CIAA remote released 371,300 sockeye salmon smolts (brood year [BY] 2010) adjacent to this facility. These fish were hatched and reared to smolt at the TLH before being transferred to net pens at TBLH for imprinting. Of those released, all were of English Bay Lakes stock. The sockeye salmon return to this facility in 2012 was entirely of Hidden Lake origin (BY07–301,000, BY08–278,000). A total of 2,590 were harvested for broodstock from fish returning to this hatchery in lieu of the preferred English Bay Lake sockeye salmon which had a poor return in 2012. Sockeye salmon eggs harvested in 2012 were transported to the TLH for incubation and will be discussed in the Trail Lakes Hatchery section under *Cook Inlet Salmon Enhancement*.

Wild pink salmon were harvested for use as broodstock from 2 locations in 2012. A total of 8,140 fish (5,330,721 eggs) were harvested from Tutka Creek for use to restart a return of this species at this hatchery. In addition 24,758 fish (16,438,682 eggs) were harvested from the terminus of Port Graham Bay to restart a remote release at the Port Graham Hatchery site. The returning adults from this release will be used for cost recovery purposes in 2014. These fish may also be used for broodstock purposes to reseed the Port Graham Hatchery which CIAA is in the process of acquiring (Appendix F3).

Currently TBLH has a permitted capacity of 125 million pink and 660,000 sockeye salmon eggs. This hatchery has not applied thermal marks to any fish cultured at this location and currently is developing the capability of applying thermal marks. CIAA has indicated that thermal marking systems will be functional for the 2012 brood year.

In 2012, the total estimated run of adult sockeye salmon returning from remote releases at Tutka Bay Lagoon was 20,346 fish. Of these, 17,756 were reported on fish tickets as being harvested for cost recovery, and 2,590 for broodstock (Appendices F1 and F2). Commercial set gillnet permit users in the Tutka Bay and Barabara Creek Subdistricts likely also harvested a portion of this return. This is supported by the increase in reported July harvests. Without a harvest sampling program in place to examine thermal marks on landed fish, an accurate estimate of the

hatchery component and the hatchery age composition of the commercial harvest cannot be made.

TRAIL LAKES HATCHERY

The Trail Lakes Hatchery (TLH) is located on the Seward Highway, approximately 47 kilometers (29 miles) north of Seward (Figure 10). This hatchery was built in 1982 by ADF&G, and has been operated under contract by CIAA since 1989. Initially this facility produced sockeye, coho and Chinook salmon. Water for hatchery operations is supplied by ground wells that are capable of producing approximately 139–186 l/s, of which 132 l/s are required for hatchery operations. All releases from this hatchery are remote releases. Sockeye salmon have been consistently produced at the TLH since 1983 with releases ranging from 516,000 (1986) to 18.9 million (2002) with an average of 12.0 million fish per year from 2002 to 2011. In addition to release sites in upper Cook Inlet, TLH produced hatchery sockeye salmon have been released into Lower Cook Inlet systems such as Bear Lake and Grouse Lake as well as lakes (Leisure, Hazel, and Kirschner) that were stocked by the Tutka, Crooked Creek, and Eklutna hatcheries prior to 1998. See the section LCI Remote Release under *Cook Inlet Salmon Enhancement* for further information regarding specific remote release sites. Coho salmon have also been produced at TLH in consistent numbers since 1983 with releases ranging in size from 75,000 (1996) up to 1.7 million (1987) with an average release of 731,000 fish from 2002 to 2011. The majority of the coho salmon reared in recent years have been released into Bear Lake. Chinook salmon were produced from 1984 to 1988 and chum salmon were raised for 1 year with a release of 455,809 in 1985 into Resurrection Bay systems. This hatchery has been consistently applying thermal marks to releases since 1991.

In 2012, the total run of adult sockeye salmon to remote release sites from this hatchery in Cook Inlet, was 184,666 fish. The overall run was less than the CIAA forecast run of 295,000 sockeye salmon. (Appendix F1). A total of 114,592 sockeye salmon were harvested for hatchery cost recovery worth 1.0 million dollars (Table 3). A total of 8,735 sockeye salmon were collected for broodstock and of those, no spawned or unusable carcasses were reported sold (Appendix F2). The common property commercial fleet harvested approximately 19,425 (10.5%) of the total TLH sockeye salmon run (Appendix F4). This includes remote releases at Kirschner Lake, Hidden Lake and all sites in Kachemak Bay. In addition to sockeye salmon, TLH also currently produces an average of 731,000 coho salmon annually (Appendix F8). Currently TLH has a permitted capacity of 6 million coho, 4 million Chinook and 30 million sockeye salmon eggs.

In 2012, a total of 12.8 million sockeye salmon eggs comprised of 4 stocks were harvested from 6 sites in Cook Inlet. These sites are:

Collection site	Stock	Green eggs harvested
Bear Lake	Big River/Upper Russian Lake/Bear Lake indigenous	6,041,114
Tutka Bay Hatchery	Hidden Lake	4,326,340
Hidden Lake	Hidden Lake	964,148
English Bay Lakes	English Bay Lakes	432,022
Port Graham Hatchery	English Bay Lakes	899,121
Shell Lake	Shell Lake	91,287
Total green egg harvest		12,754,032

Sockeye salmon were released at 7 locations in Lower Cook Inlet as well as into Hidden Lake in 2012. Bear Lake stock was released into Resurrection Bay and stocked back into Bear Lake. English Bay stock were planted in Tutka Bay Lagoon, Hazel and Kirschner Lake as well as stocked into English Bay Lake. Hidden Lake stock fish were released into Leisure Lake as well as into Hidden Lake. Historic and current stocking levels for these systems are listed in Appendix F17. See the LCI Remote Release section under *Cook Inlet Salmon Enhancement* for further information regarding specific sites.

In 2012, the total run of adult coho salmon produced by the TLH was 924 fish and below the forecast run of 2,800 fish. The majority of these fish originated from the BY09 release (435,000). The commercial fleet harvested 175 coho salmon from Lower Cook Inlet of which few to none were likely of hatchery origin. CIAA collected 327 coho salmon for broodstock for a total of 630,927 green eggs (Appendices F1 and F5). This is less than the 4.0 million eggs that CIAA is permitted for this species. An additional 68 coho salmon were collected from this return by ADF&G hatchery managers for use as broodstock at the Ship Creek Hatchery Complex.

EKLUTNA HATCHERY

The Eklutna Hatchery is located 13 kilometers (8 miles) southeast of Palmer on the Old Glenn Highway. Built by CIAA in 1981 to produce chum and coho salmon for stocking in upper and lower Cook Inlet systems, this facility also produced sockeye salmon from 1993 to 1998 (Appendix F9). This hatchery is owned by Cook Inlet Aquaculture and was operated by them from 1982 until 1998 when salmon production was transferred to the TLH. This facility continues to be maintained and provides additional fish rearing resources for CIAA when water supplies are limited at the TLH. Currently the Eklutna Hatchery has a permitted capacity of 160,000 coho, and 18 million sockeye salmon eggs. This facility does not have the ability to thermally mark salmon. Beginning in 1998, ADF&G has held and released Chinook and coho salmon smolt from the tailrace of this facility.

CROOKED CREEK HATCHERY

Crooked Creek Hatchery (CCH) is located 1.6 kilometer (1 mile) south of the Kasilof River (Figure 1) and is accessible from the Sterling Highway. CCH was built in 1975 by the State of Alaska. In July 1993, the ADF&G transferred operation of this facility to CIAA. Prior to this transfer, CCH incubated and reared sockeye, coho, and Chinook salmon as well as steelhead trout for release into various water bodies throughout the central and lower Cook Inlet drainage (Appendix F10). While under CIAA management, the hatchery stocking program focused on sockeye salmon releases to Tustumena Lake as well as several lower Cook Inlet lakes and Resurrection Bay. In November 1996, CIAA terminated operations at CCH, and transferred sockeye salmon stocking programs for all 5 lower Cook Inlet lakes (Leisure, Hazel, Kirschner, Grouse, and Bear lakes) to its Eklutna and Trail Lakes hatcheries. CCH remained idle until 1999. Beginning that year ADF&G has used this facility to rear and imprint Chinook salmon that were incubated and thermally marked at the Fort Richardson Hatchery (FRH). In addition, eggs were collected from returning Chinook salmon at the CCH and transferred to FRH for incubation and thermal marking. This facility thermally marked salmon during its last year of operation in 1996.

PORT GRAHAM HATCHERY

The Port Graham Hatchery (PGH) is in the village of Port Graham (Figures 1 and 18) and is located in a converted Whitney-Fidalgo salmon cannery. The hatchery was permitted in

September, 1992 and owned and actively operated by the Port Graham Hatchery Corporation until 2007. Water for operations in the main hatchery building was supplied by the untreated Port Graham municipal water supply at a rate of 13-28 l/s. Freshwater for the adult holding and egg take complex comes from nearby Cannery Creek via an 8 inch pipeline at a rate of 50-107 l/s. Prior to permitting, the hatchery had been conducting experimental pink and sockeye salmon egg-takes and fry releases via a scientific/educational permit since 1990. Sockeye salmon were raised at this facility during many years from 1991 to 2006 with releases ranging from 85,000 (1991) to 918,000 (1999) with an average release of 316,000 fish between 1991 and 2006 (Appendices F11 and F27). This facility provided sockeye salmon fry and smolt for the Nanwalek Salmon Enhancement Project (NSEP) from 1992 to 2008. See the NSEP section under *LCI Remote Releases* for further details on this project.

Pink salmon were released during most years from 1991 to 2007 with releases ranging from 255,000 (1991) up to 57.2 million (2003) with an average release of 11.6 million fish. In addition, coho salmon eggs were collected from the Port Graham River in 1996 and in October 1997 a total of 29,963 coho salmon smolt were released from this facility. The project was discontinued after this release. In January, 1998 a fire completely destroyed the original Port Graham Hatchery building including incubation modules containing pink and sockeye salmon eggs collected during the previous year. A separate building that housed the empty coho salmon module was undamaged by the fire. This building was converted to pink and sockeye salmon incubation to allow for incubation of eggs collected during the upcoming summer. Rearing infrastructure in this newer building allowed the hatchery manager to thermally mark all pink salmon fry beginning in 1998. Sockeye salmon thermal marking began in 2003. In 2006 the loss of a hatchery manager, combined with financial troubles resulted in sockeye and pink salmon releases ending in 2006 and 2007, respectively. Consequently, the PGHC contracted with the CIAA in 2007 to harvest 510,000 sockeye salmon eggs from returning PGH fish, incubate them at the TLH and then release them as presmolt in English Bay Lakes, (246,000; October 30, 2008) and as smolt in Port Graham (112,000; June 15, 2009).

No pink salmon have been released from the PGH since 2007. Currently CIAA is negotiating with PGHC to assume management of the PGH facility in 2013. Presently the PGH has a permitted capacity of 110 million pink and 1.35 million sockeye salmon eggs.

In 2012, the overall estimated return of sockeye salmon remote released at the Port Graham Hatchery was 503 fish. These 5-year-old fish originated from the BY2007 release in 2009. Since that time there have been no sockeye salmon releases from this site. In addition 21,645 pink salmon were reported on fish tickets as having been harvested from Port Graham, according to fish tickets, 19,918 of those were sold to Icicle Seafoods. These were then sold live to CIAA for use as broodstock. CIAA reported the quantity purchased as 24,758 fish. This discrepancy (20%) is possibly related to differences in average weight used to calculate the number of fish from the poundage sold (Appendices F3 and F27).

The progeny from these fish will be released at the site of the PGH with the returning pink salmon in 2014 used for cost recovery, or as broodstock for seeding the PGH.

SHIP CREEK HATCHERY COMPLEX: FORT RICHARDSON, ELMENDORF, AND WILLIAM JACK HERNANDEZ STATE FISH HATCHERIES

The Fort Richardson and Elmendorf state fish hatchery facilities are located on military bases near Anchorage. The Elmendorf facility ceased operation in 2011 and the Fort Richardson Hatchery is slated to transfer all operation to the William Jack Hernandez State Fish Hatchery by 2016. These facilities have historically produced coho and Chinook salmon for release to sites in LCI (Halibut Cove Lagoon, Homer Spit, Bear Lake, etc.). Production from these hatcheries is intended primarily for harvest by non-commercial users (Appendices F12).

BIG LAKE STATE FISH HATCHERIES

The Big Lake state fish hatchery operated from 1976 to 1993 and was located 20 miles west of Wasilla. This facility produced Chinook, sockeye, and coho salmon. Sockeye salmon from this facility were released into English Bay Lakes in LCI from 1991 to 1993. Coho and Chinook salmon were released into systems in upper Cook Inlet (Appendix F13).

FIRE LAKE STATE FISH HATCHERIES

The Fire Lake state fish hatchery operated from 1964 to 1979 and was located 15 miles north of Anchorage near Eagle River. In addition to producing trout, grayling and char, this facility also produced Chinook, sockeye, coho, and pink salmon. Coho salmon from the Fire Lake Hatchery were released into Bear Lake in Lower Cook Inlet as well as Caribou Lake, Halibut Cove Lagoon and Kasitsna Bay. Chinook salmon were also released into Kasitsna Bay. Sockeye and pink salmon were released at Crooked Creek in upper Cook Inlet (Appendix F14).

LCI REMOTE RELEASES

Nanwalek Salmon Enhancement Project (NSEP)

The English Bay Lakes system is located approximately 1.6 kilometers (1 mile) southeast of the village of Nanwalek (formerly English Bay; Figures 1, 2, 5, and 18). The English Bay Lakes system is a chain of 5 small lakes with a total surface area of approximately 200 hectares (0.77 square miles). These lakes have the only commercially significant stock of sockeye salmon native to the Southern District of LCI. Production in this system declined in the early 1980s resulting in commercial fishery closures beginning in 1985, and later subsistence harvest restrictions in order to increase escapement. The ADF&G's Fishery Research, Enhancement, and Development Division conducted limnology studies and reported in 1992 that these lakes were nutrient poor, and given that recent escapements (1985–1990) were only 60% of the historic average, "…the amount of nutrients from carcasses has been reduced from what it once was, and has further decreased fertility of the lakes in the English Bay watershed." Stocking at English Bay Lakes began in 1990 with a release of 855,000 fry that were grown from eggs collected the previous year in English Bay and reared at the Big Lake Hatchery facility near Wasilla. With the closure of Big Lake Hatchery in 1992, incubation and early rearing of sockeye salmon from English Bay Lakes occurred at the nearby PGH. EBL system has received sockeye salmon releases in all but 7 years since 1990. These releases have varied significantly in size from 50,096 to 906,057 with an average of 478,000 fry per release (Appendices F17 and F28).

While hatchery releases of BY07 sockeye salmon fry did occur in 2008, (246,000) there were no releases of BY08 fish into English Bay Lakes the following year. With no monitoring programs

in place to sample otoliths of sockeye salmon returning to English Bay Lakes, an estimate of the hatchery return to this remote release site in 2012 could not be made.

Leisure and Hazel Lakes

Leisure (China Poot) Lake is located approximately 18 kilometers (11 miles) southeast of Homer (Figures 1, 2, and 16). Leisure Lake has a surface area of approximately 100 hectares (0.4 square miles). The lake outlet has a set of impassable falls that prevents the return of anadromous adult sockeye salmon. This lake has been stocked regularly with an average of 1.6 million sockeye salmon per year since 1976 (Appendix F17). Until the early 1990s, Leisure Lake was used experimentally to determine fry stocking densities that would produce optimum adult returns. Lake fertilization was initiated in 1984 to increase salmon production. The brood source for stocking from 1976 until 2004 was Tustumena Lake. A lawsuit by the Wilderness Society and the Alaska Center for the Environment challenging the permit to collect these eggs (provided by the United States Fish and Wildlife Service), resulted in the loss of Tustumena Lake as a collection site. The broodstock source was changed to Hidden Lake in Upper Cook Inlet. Hidden Lake is 680 hectares (2.6 square miles) in size and is 68 kilometers (42 miles) east of Soldotna. Hidden Lake has an indigenous population of sockeye salmon of similar timing to Tustumena Lake. This stock was first enhanced by ADF&G in 1976 and later by CIAA (Appendix F18). From 2004 through 2011 Hidden Lake has been the source of broodstock for Leisure Lake and Hazel Lake stocking. In 2012, fry from English Bay Lakes were planted into Hazel Lake with Hidden Lake stock sockeye salmon planted into Leisure Lake. Hazel Lake is located approximately 4 kilometers (2.5 miles) southwest of Leisure Lake (Figure 1). Hazel Lake has a surface area of approximately 90 hectares (0.35 square miles) and drains into the Wosnesenskii River which is approximately 14 kilometers (9 miles) long. Hazel Lake has been stocked for 22 of the last 25 years with an average of 1.1 million sockeye salmon juveniles (Appendix F17).

Hatchery salmon returning to both Hazel and Leisure lakes have been thermally marked since brood year 1990. However, without funding to support a sampling program, ADF&G has been unable to take advantage of these identifying features. Estimated commercial harvest contributions by returning Leisure Lake and Hazel Lake sockeye salmon are shown in Appendix F23. These values are the total seine harvest of all sockeye salmon from the Southern District. Prior to returns of significant numbers of enhanced salmon to the Southern District in 1980, the seine harvest of sockeye salmon was minimal with a range of 5 to 5,232 fish and an average of 1,749 fish since 1959, excluding 1978 where 54,000 were harvested (Appendix A3). While some hatchery salmon are likely harvested by set gillnet permit holders, it is possible that gillnet web selects for larger wild fish that are typically 5 to 6 years of age when they return as opposed to hatchery reared fish where the majority (~70%) are 4 years of age. Supporting this, prior to enhancement, the set gillnet harvest from 1959 to 1980 ranged from 6,148 to 54,404 fish with an average of 19,538 fish. However, after enhancement, the set gillnet harvest increased only by about one-third to 30,015 fish per year on average. However, the seine average harvest increased more than fifty times over the previous amount of 89,359 fish per year.

Overall return to this site from 2008 (BY07) and 2009 (BY08) sockeye salmon releases, (3.2 and 2.4 million respectively) was estimated at 22,715 fish. Both years releases were derived from Hidden Lake stock (Appendices F1, F17, and F23; Figures 19 and 20).

Kirschner Lake

Kirschner Lake is the third lake in LCI that has historically been used for remote sockeye salmon releases. Kirschner Lake is located on the west side of Cook Inlet and is 24 kilometers (15 miles) due west of Burr Point which is the northernmost point of Augustine Island (Figure 12). Kirschner Lake is approximately 140 hectares (0.54 square miles) in size and has a barrier falls at the outlet that prevents fresh water migration of returning anadromous salmon. Kirschner Lake has been stocked for 22 of the last 26 years with an average of 297,000 fry. In 2011, CIAA submitted a Permit Alteration Request seeking to use Bear Lake sockeye salmon as the brood source for Kirschner, Leisure and Hazel lakes until English Bay Lake stock is available. The current late-run Hidden Lake stock has proven difficult to cultivate at the Tutka Bay Lagoon Hatchery, and the returning fish have been of a smaller size than anticipated resulting in reduced cost recovery value. This permit was declined due to concern regarding introduction of the Bear Creek stock into adjacent LCI spawning systems. Consequently, English Bay stock sockeye salmon were released into Kirschner Lake in 2011 and again in 2012. Cost recovery from Kirschner Lake was only partially successful in 2012. While aerial surveys documented numbers of sockeye salmon holding off of this site on July 18, 27, 31 and August 8, and 11, only 1 harvest occurred on July 24 where 1,260 fish were caught. A cost recovery vessel was on site on Monday, August 13 after an aerial survey on August 11 reported 1,200 sockeye salmon. The vessel operator was unable to locate schooled fish and departed later that day. While the Kirschner SHA was opened to CPF on Thursday, August 16 no harvest occurred for the remainder of the season at this location. Returns for 2012 would have been primarily from the 2008 (BY07) release of 300,000 Hidden Lake stock fry, as there was no release to Kirschner Lake in 2009. CIAA harvested 1,260 fish for cost recovery with an additional 1,300 observed but not harvested for a total run of 2,560 sockeye salmon (Appendices F1, F17, and F25).

Halibut Cove Lagoon

Halibut Cove Lagoon (HCL) is located approximately 18 kilometers (11 miles) southeast of Homer on the south side of Kachemak Bay (Figures 1, 2, and 16). HCL has a surface area of approximately 220 hectares (0.85 square miles, 544 acres) and a maximum depth of approximately 70 meters (230 feet). The outlet to HCL is a narrow and shallow channel. Consequently this lagoon experiences slow flushing and only minimal turnover. Additionally, access in and out of the lagoon with fishing vessels is tide dependent and can be problematic. Halibut Cove Lagoon has been the site of enhancement activity since the mid-1970s and has had 5 species of Pacific salmon stocked at varying times as shown below:

Species	Release years, (n-years)	Maximum release	Average release
Chinook	1975–2012, (35)	225,000	96,000
Sockeye	1976, (1)	7,777	7,777
Coho	1974–1979, (5)	308,000	106,000
Pink	1975, 1977, 1986–1992, (9)	6.2 mil	3.8 mil
Chum	1974, 1975, (2)	7,782	4,189

In 2011, a Permit Alteration Request was approved by ADF&G for CIAA to remote release up to 84 million unmarked pink salmon fry into HCL. Broodstock for this release would come from fish caught during common property fisheries by commercial permit holders in specific subdistricts in the Port Dick area. These fish would be sold to processors and then purchased by CIAA. Returns from the HCL release would be harvested for cost recovery purposes while the

pink salmon return to the Tutka Bay Lagoon Hatchery is developed using local stock taken from the adjacent Tutka Lagoon Creek. Assuming 3% survival, a return of 2.5 million pink salmon would be expected from the proposed maximum release of 84 million fry. From 1986 to 1992, annual remote releases to HCL ranged from 4 to 6.2 million fry (average = 4.9 million). Commercial harvest (seine and set gillnet) from the Halibut Cove Subdistrict overall from 1988 to 1994 ranged from 58,000 to 254,000 pink salmon, (average = 115,000). Commercial seine harvest from Halibut Cove Lagoon specifically during this period of time ranged from 38,000 to 162,444 fish, (average = 77,000). Alaska State Parks denied the permit request in February 2012 and directed that CIAA release the Windy Bay stock fry outside of Halibut Cove Lagoon near the base of Halibut Creek. A total of 3.1 million fry were released at this location on June 26.

Chinook salmon returns to HCL are primarily intended for sport fish harvest. However some of these fish are likely harvested in Southern District commercial fisheries (Appendices A1, A2, and F15).

Tutka Bay Lagoon

In addition to releases from the TBLH, the lagoon has also been a remote release site for sockeye salmon hatched at TLH since 2005. This is due to pathogen related issues at the TBLH facility that are specific to sockeye salmon and have hampered production of this species at this hatchery. Releases at this site historically have been of Hidden Lake stock since 2005 (with Packers Lake stock released during years of local TBLH production). However, beginning in 2011, releases have been of English Bay Lake stock with 58,200 released in that year along with 197,100 Hidden Lake stock fish. In 2012, a total of 371,300 were released, all of which were of English Bay Lakes origin.

The sockeye salmon adult run to this site in 2012 was from 301,000 Hidden Lake smolts released in 2009 (BY07) and 278,000 in 2010 (BY08). The overall run was estimated at 22,595 fish (Appendices F26).

Bear Lake and Resurrection Bay

Bear Lake is located approximately 10 kilometers (6 miles) northeast of Seward. Bear Lake has a surface area of approximately 180 hectares (0.69 square miles) and has been monitored since 1960 when a picket weir was established where Bear Creek intersects the Salmon River. Initial enhancement activities in the early 1960s focused on coho salmon and the control of predators such as threespined stickleback (*Gasterosteus aculeatus*) and Dolly Varden char (as well as alleged competing species such as sockeye salmon. To accomplish this, the pesticide Rotenone was methodically applied to the lake on August 26, 1963 by ADF&G biologists. In addition,

> "…a barrier 5 feet high was then constructed to hold the treated water until detoxification, and to prevent the ingress of nonsalmonid species" (Bandirola 1965, page 148).

Coho salmon hatched from eggs collected taken in Bear Creek in the previous fall, were reintroduced in November and December of 1963.

> "The barrier at the outlet of rehabilitated Bear Lake was destroyed as a result of the Good Friday earthquake and reinfestation of the lake by Dolly Varden and threespine sticklebacks occurred. A concrete weir to assess upstream and downstream salmon

migrations and to serve as a permanent barrier was completed in Bear Creek on August 25, 1964" (Bandirola 1966, page 129).

This barrier is a low concrete dam with spaced pickets along the upper surface. Water spilling over the top of the dam prevents smaller fish from travelling upstream and larger fish are stopped by the pickets. A submerged wire cage sets in the main water outflow. This is closed and mechanically hoisted into a building above the weir and opened onto a sorting table. Smaller fish such as Dolly Varden char (*Salvelinus malma*), sculpin (*cottidae* sp.), lampreys *(Entosphenus tridentatus*) and threespined sticklebacks (*Gasterosteus aculeatus*) drop through the sides and bottom of the basket back to the downstream area. Once on the sorting table, salmon can be passed to the upstream side of the dam, or harvested for broodstock and hatchery cost recovery purposes. Trout, char as well as undesirable species of salmon are passed back to the downstream side of the weir. In addition to Dolly Varden char, weir operators have documented in annual reports returning steelhead trout (*Onchorhynchus mykiss*), Chinook salmon as well as pink and chum salmon to the downstream side of the weir. Members of the public have also reported observing hundreds to thousands of coho salmon milling downstream of the weir in late fall after the weir has closed for the season.

Bear Lake was again treated with Rotenone by ADF&G biologists in 1971 on July 21 and 22. The stated goal of this treatment was the eradication of threespine stickleback from Bear Lake with no mention of removing other species such as sockeye salmon, Dolly Varden char, lamprey, freshwater sculpin, etc. According to McHenry (1972), "…the lake could no longer rear substantial numbers of juvenile coho salmon due to extreme competition for survival from threespine sticklebacks." In 1988, the Alaska Board of Fisheries revised the *Bear Lake Management Plan* (5 AAC 21.375) to allow for the enhancement of sockeye salmon in this lake. Bear Lake has been stocked since 1963 with an average of 539,370 coho salmon smolt annually (Appendix F19). Broodstock for many of the coho salmon releases in the early 1960s came from the Swanson River (Kenai Peninsula), Pasagshak River (Kodiak Island), Ketchikan Creek (SE Alaska), Dairy Creek (Seward Lagoon) as well as Big Creek in Oregon. Sockeye salmon have been stocked into this lake annually since 1990 with an average of 1.8 million released. Sockeye salmon remote releases into this lake from the Trail Lakes Hatchery from 1990 to 1992 came from the Upper Russian River and Big River, both of which drain into upper Cook Inlet. In addition, in 1998, 507,000 Tustumena Lake sockeye salmon smolt were released that had also been reared at the Trail Lakes Hatchery. Since that time all other releases have been derived from broodstock harvested at Bear Lake. CIAA has been responsible for operation of this weir since 1990.

In addition to Bear Lake, coho and the other species of Pacific salmon have been released into other locations in Resurrection Bay since the late 1970s. Returns for these species typically are targeted by non-commercial users as specified in the *Resurrection Bay Salmon Management Plan* (5 AAC 21.376). Both pink and chum salmon have been released irregularly into a variety of locations in Resurrection Bay (Appendices F21 and F22). In 2008, CIAA began releasing an average of 1.6 million sockeye salmon smolt annually from net pens anchored in Resurrection Bay.

Overall sockeye salmon runs to this site in 2012 were from the 2.4 million BY07 Bear Lake fry released in 2008, and 2.5 million BY08 Bear Lake fry released in 2009. In addition, 1.7 million BY07 smolt were released in 2009, and 1.7 million BY08 smolt were released in 2010 from net pens anchored in Resurrection Bay. The total return from both sites combined was estimated at

96,067 fish (Appendices F1, F17). The coho salmon run to Bear Lake Creek in 2012 originated from the 2008 release of 2.5 million BY07 and the 2009 release of 435,000 BY08 fry. Sampling of the sport fishery from 2003 to 2005 determined that 29.8% of the fish harvested were thermally marked hatchery coho salmon (Bosch 2011).

2012 COMMERCIAL HERRING FISHERY

Similar to the salmon fishery, commercial Pacific herring *Clupea pallasii* fishing in LCI has historically occurred in 4 of the 5 management districts, with the Barren Islands District the only area where commercial herring fishing has not occurred (Figure 1). LCI herring fishing first began in the Southern District in 1914 with the development of a gillnet fishery within Kachemak Bay. Eight salteries, including 6 near Halibut Cove, were operating during the peak of the fishery. A purse seine fishery in Kachemak Bay began in 1923. But after 3 successive years of average annual harvests approaching 8,000 short tons (st; 1 short ton = 2,000 pounds), herring populations, and hence the fishery, collapsed.

The next LCI herring fishery began in 1939 and was centered in the Resurrection Bay and Day Harbor areas of the Eastern District (Figure 10). Product from this purse seine fishery was used exclusively for oil and meal reduction. Although the fishery continued through 1959, peak harvests occurred from 1944 to 1946, averaging 16,000 st each of those years. After this time period, stocks sharply declined, apparently due to over-exploitation.

LOWER COOK INLET COMMERCIAL HERRING FISHERY

HARVEST STRATEGY AND STOCK ASSESSMENT

The LCI herring management area includes waters of Cook Inlet, south of the latitude of Anchor Point including the western shore of Cook Inlet south to Cape Douglas, and the eastern shore of Cook Inlet along the Kenai Peninsula to Cape Fairfield (Figure 1). This management area is divided into 5 districts that match those for LCI salmon.

Commercial Pacific herring fishing in LCI has historically occurred in 4 of the 5 management districts, with Barren Islands District the sole area where commercial herring fishing has not occurred (Figure 2). Historic fisheries have included food/bait, meal/oil reduction and sac roe harvest with legal gear at times including both gillnet and seine. All of these fisheries have suffered periods of stock depletion and extended closures (Appendix G2).

Currently, 2 separate herring management plans regulate fisheries in LCI, both adopted in 2001 by the BOF. The first management plan (5 AAC 27.463) renders waters of the Southern, Outer and Eastern Districts closed to commercial herring harvest, citing concerns for stock abundance and sustainability of commercial harvest in these areas. The Kamishak Bay District Herring Management Plan (KBDHMP; 5 AAC 27.465) describes the management strategies used to set and implement the guideline harvest levels for the Kamishak Bay sac roe fishery and is the only plan currently in place which could allow a commercial herring fishery in LCI. This plan was most recently adjusted in 2001 to include a reduction in the maximum exploitation rate allowed in the fishery, from a former level of 20% of the forecasted herring biomass, to a new level of 15%, and a reduction in the biomass threshold (the minimum necessary in order to allow a fishery) from 8,000 st to 6,000 st. Highlights of the original plan that were retained include a management strategy intended to limit the harvest of herring age 5 and younger, and an allocation of 10% of the allowable harvest of Kamishak Bay herring to the Shelikof food/bait

fishery in Kodiak Management Area. Lawful gear in the Kamishak Bay sac roe fishery is restricted to purse seine. The limited entry permit system for sac roe herring seining in Cook Inlet was implemented in 1977, and 75 permanent permits are currently issued for the management area. Historical harvest and management information for the Kamishak Bay sac roe fishery can be found in Appendices G3 and G4.

The Kamishak Bay sac roe fishery was closed beginning with the 1999 season due to low abundance levels. Management since that time has concentrated on assessment of the Kamishak Bay herring biomass to determine when commercial harvest can be sustainably resumed.

The primary method of herring biomass assessment in LCI is aerial survey. When adequate funding is available, aerial surveys are conducted annually throughout the herring spawning season in the Kamishak Bay and Southern districts, from mid-April through early June, to determine relative abundance and distribution of herring. Because a commercial herring fishery has not occurred in the Outer and Eastern districts in many years, and is not likely to occur in the near future, aerial surveys of these areas are no longer conducted. Even though no commercial fishery is expected in Southern district, fishermen do annually participate in a personal use herring fishery in Kachemak Bay. ADF&G staff monitors Southern District herring to document general trends in these nearby waters. When funding is available, data collection methods in the Kamishak Bay and Southern Districts are consistent between seasons; with numbers and distribution of herring schools, location and extent of spawning events, and visibility factors affecting survey results recorded on index maps for each survey. Beginning in 2012, hard copy index maps were replaced by tablet computers running a customized version of ArcPad that allowed surveyors to enter their observations directly onto digital charts. Three standard conversion factors are used to estimate herring biomass based on each 538 ft^2 (50 m^2) of school surface area sighted and the following water depth parameters: 1) 1.52 st for water depths of 16 ft or less; 2) 2.56 st for water depths between 16 and 26 ft; and 3) 2.83 st for water depths greater than 26 ft (Lebida and Whitmore 1985; Otis and Bechtol 1999).

Due to invariably poor weather and water clarity, aerial surveys rarely provide reliable estimates of total herring biomass returning to Kamishak District Bay waters (Otis et al. 1998). As a result, an age-structured-assessment (ASA) model has been used since 1994 to forecast herring abundance for Kamishak Bay, as well as to "hindcast" previous years' total abundance (Appendix G5). This dynamic model incorporates a variety of heterogeneous data sources including: a time series of commercial catch age composition; total run age composition; and aerial survey biomass estimates from years with adequate survey conditions and coverage. The model simultaneously minimizes the differences between expected and observed return data for each of its components, updates hindcasts of previous years' abundance, and produces a forecasted estimate of the following year's run. This is an important tool both for management to help determine appropriate harvest levels, and for research to revise previous biomass estimates with updated return data and gain a more accurate picture of trends over time (Appendix G5).

When funding is available, another tool ADF&G utilizes to aid in herring assessment in Kamishak Bay District, and opportunistically in the Southern District, is a chartered commercial seine vessel. In years when no commercial fishery occurs, the department is unable to utilize the fleet to collect samples for age, sex, and length composition analysis. By chartering a commercial purse seine vessel, age, sex, and length and disease samples and other related information can be collected and used to further aid in understanding the dynamics of the herring

stocks. When sufficient funding is available, separate sampling charters are conducted to sample different portions of the spawning migration (early and late). In years when a fishery occurs (traditionally in the early part of the migration), a single "late season" sampling charter is employed to obtain a more complete picture of the overall run. Hydroacoustic observations and water temperature/depth parameters are concurrently documented during the charters. The information gathered during these sampling efforts provides age class data that: 1) allows the staff to generate an age composition estimate of the overall biomass observed by aerial surveyors throughout the entire duration of the spawning migration; and 2) facilitates the evaluation of the relative strength of recruiting year classes. This is critical in generating the annual herring forecast. The charters further serve to informally verify the relative magnitude of herring biomass observed by aerial surveyors.

Unfortunately, funding for vessel charters was cut in 2011 and age, sex, and size data are no longer available to run the ASA model to monitor trends in stock status. ADF&G staff continue to seek auxiliary funding to restore this key component of the Kamishak Bay herring stock assessment program. Temporary funding has been approved to cover charter costs during the 2013 season.

SEASON SUMMARY

The Kamishak Bay sac roe fishery remained closed in 2012. For the second consecutive year, LCI herring assessment was diminished due to loss of funding. Lack of funds precluded vessel charter and age structure sampling in Kamishak Bay and aerial assessment of Southern District herring biomass. Preseason ASA modeling to forecast the 2012 return was also not possible due to the lack of age composition data, normally collected during vessel surveys (Appendix G5; Figure 5). Minimal sampling for disease prevalence in the Kamishak Bay stock was accomplished via float plane.

Aerial survey coverage to assess the Kamishak Bay herring stock was considered good in 2012. Typical for Kamishak Bay however, observation conditions were often rated as poor for observing fish due to periodic high turbidity. A total of 12 surveys were completed in the Kamishak Bay District between April 20 and June 11. Consistently fair weather allowed surveyors to avoid gaps longer than 6 days between flights this season. A relatively high abundance of herring (553 st.) was observed on the third survey (May 3), with the majority of fish recorded in the Kamishak River and Chenik/Nordyke sections. The May 3 observation represented the peak daily biomass estimate for the season; however, sizeable groups of herring (~ 200 st.) were also documented in Bruin/Amakdedori and Silver Beach sections in mid-late May. Herring were observed on most surveys flown in 2012, but abundance was generally low.

ADF&G staff documented 3 individual spawning events on May 3 and 2 events on May 7 during surveillance flights in 2012. All of the events were "spot" spawns, however and summed to just 1.0 linear mile of spawn. The number and magnitude of spawning observations in 2012 was substantially less than that documented in each of the past 4 years.

Based on hindcast estimates from the ASA model (last run in 2010), herring biomass steadily declined in Kamishak Bay between 1985 and 2001 and has now stabilized at a very low level over the past 12 years. Kamishak Bay surveys in 2012 resulted in a cumulative total index of just over 1,400 st of herring observed. This figure is the lowest observed since 2007 and continues an overall trend of low abundances seen over the past decade (Figure 5; Appendix G5).

One hypothesis for the lack of herring recruitment in Kamishak Bay originates from the relatively poor condition of the fish observed recently, characterized by low average weights-at-age, which can lead to higher than normal mortality. Another speculates that herring may not always return to their birthplace to spawn. This "adopted-migrant" hypothesis is based on the concept that, upon first achieving sexual maturity, the younger herring may simply follow older repeat spawners in a given school back to a spawning area, even if that area is not where the younger fish were originally spawned (McQuinn 1997). Finally, disease may also be affecting recruitment and survival. Up to 52% of herring collected in Kamishak Bay during previous years were positive for *Ichthyophonus*, a protozoan pathogen that has been linked to epizootics in wild populations of Atlantic herring (Hershberger et al. 2002). While it is uncertain what role disease plays in recruitment and survival, the high incidence of *Ichthyophonus* in the Kamishak Bay herring stock occurred concurrently with the loss of older age classes (> age-8) from the population. A very similar occurrence was reported with Pacific herring in Puget Sound (Hershberger et al. 2002).

In 2012, 1 sample of 60 fish was collected on May 7. Samples were obtained during an active spawning event in Bruin Bay using a variable mesh gillnet. Results from these samples indicated the *Ichthyophonus* infection rate was 1.7% and no viral hemorrhagic septicemia, or viral erythrocytic necrosis was noted.

Unfortunately, with a lack of funds for vessel charters, no herring age, sex, or size composition data were collected in Kamishak Bay in 2012. Without information traditionally provided by these charters, the ability of the ASA model used to generate the annual Kamishak herring forecast is seriously compromised. As a result, ADF&G was forced to rely solely on aerial surveys to determine relative stock abundance in 2012 and no significant age composition data are available to report.

2013 HERRING SEASON OUTLOOK

Because funding cuts precluded ADFG&G staff's ability to conduct vessel surveys for collection of age composition data in 2012, it was not possible to generate an ASA model forecast of the 2013 return. However, all information collected in 2012 suggests that the 2013 biomass will be less than the KBDHMP regulatory threshold of 6,000 st for which a commercial harvest can be considered. As a result, the sac roe fishery in the Kamishak Bay district will remain closed for the 2013 season. The resource, and hence the commercial fishery, is best served by protecting the remaining spawning population in order to rebuild to a harvestable level. No commercial herring fishery is expected in any other LCI district in 2013.

Without a commercial fishery, ADF&G's ability to collect age composition information will be greatly reduced. The department expects to once again obtain samples using a chartered commercial seine vessel throughout the duration of the 2013 run, with sufficient funding expected for both an early and late season charter. The department will continue to conduct aerial surveys throughout the spawning season, from mid-April to early June, as conditions permit. However, a 50% reduction in funding for this program compared to recent years will translate into fewer surveys and less extensive coverage.

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FIGURES AND TABLES

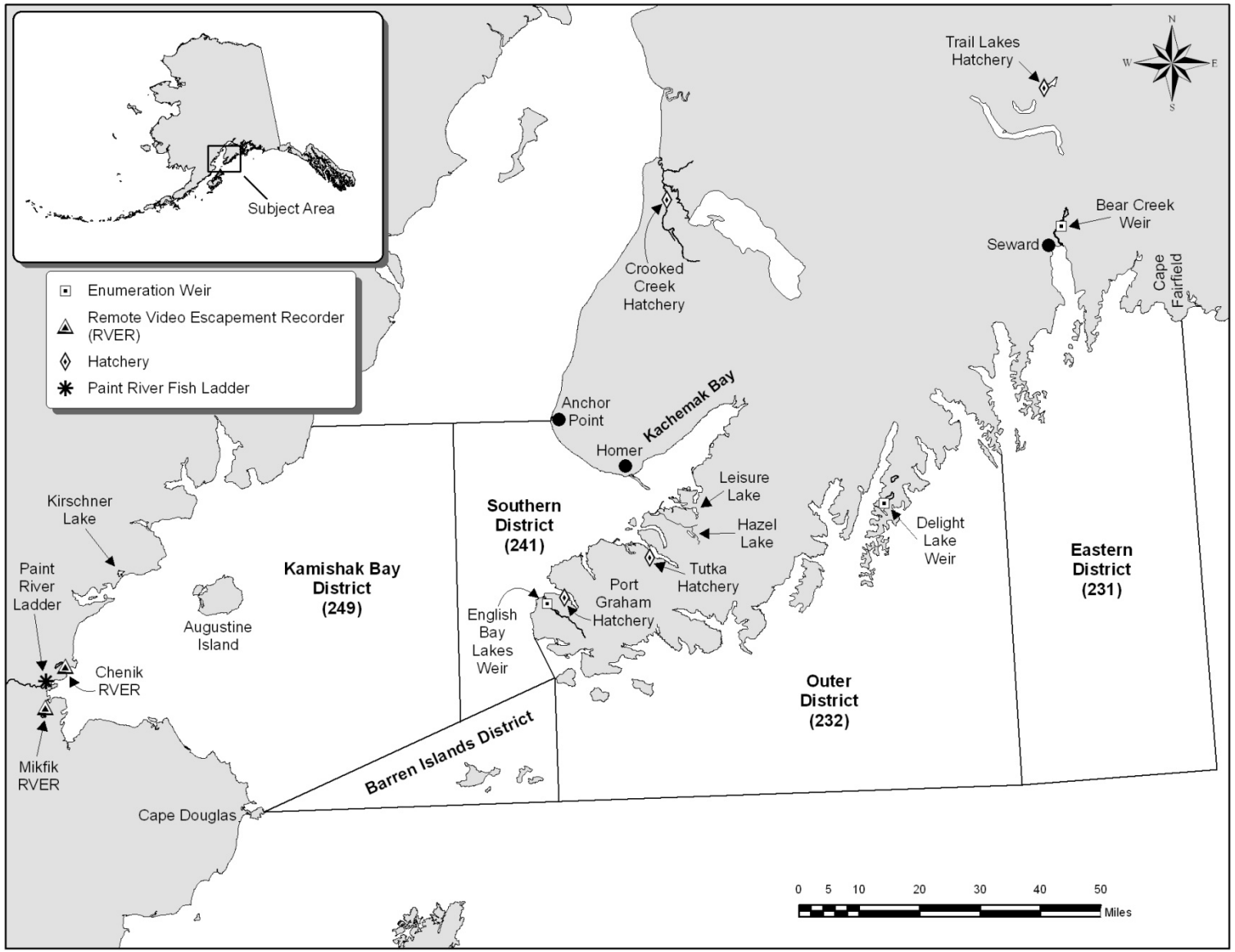


Figure 1.–Lower Cook Inlet management area showing commercial fishing districts, salmon hatcheries, weir and fish ladder locations, as well as remote salmon video monitoring sites.

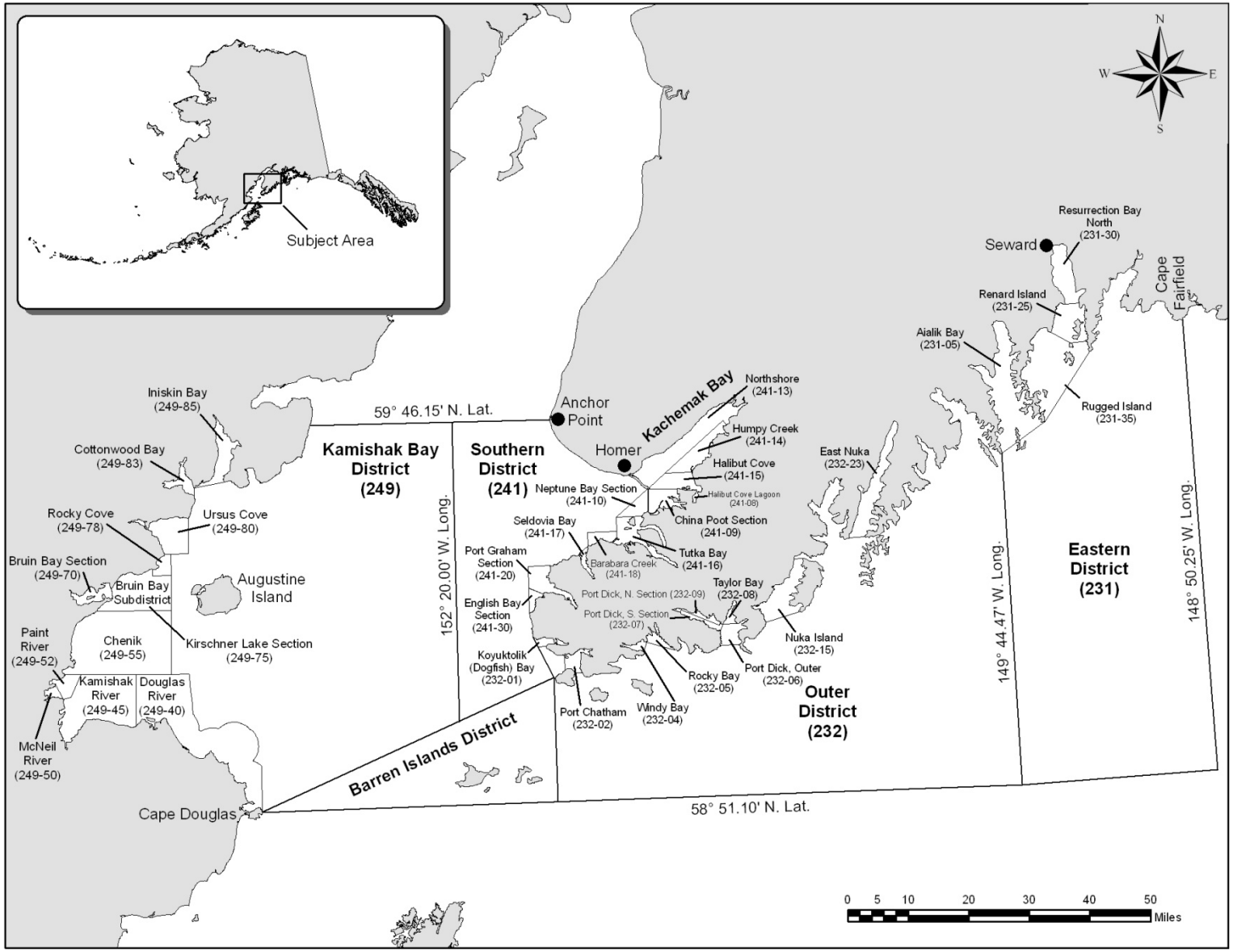


Figure 2.–Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts.

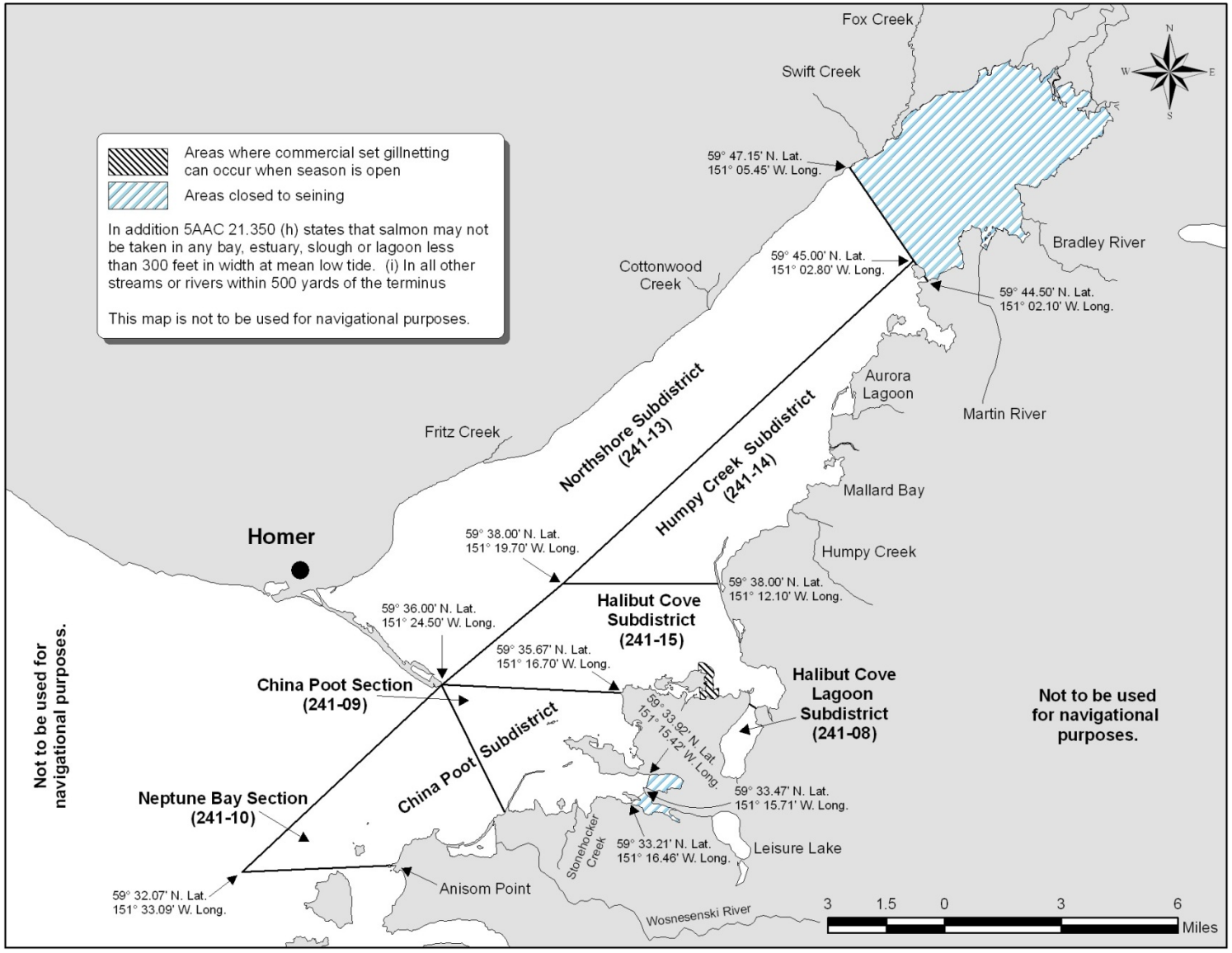


Figure 3.–Southern District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Martin River to Anisom Point.

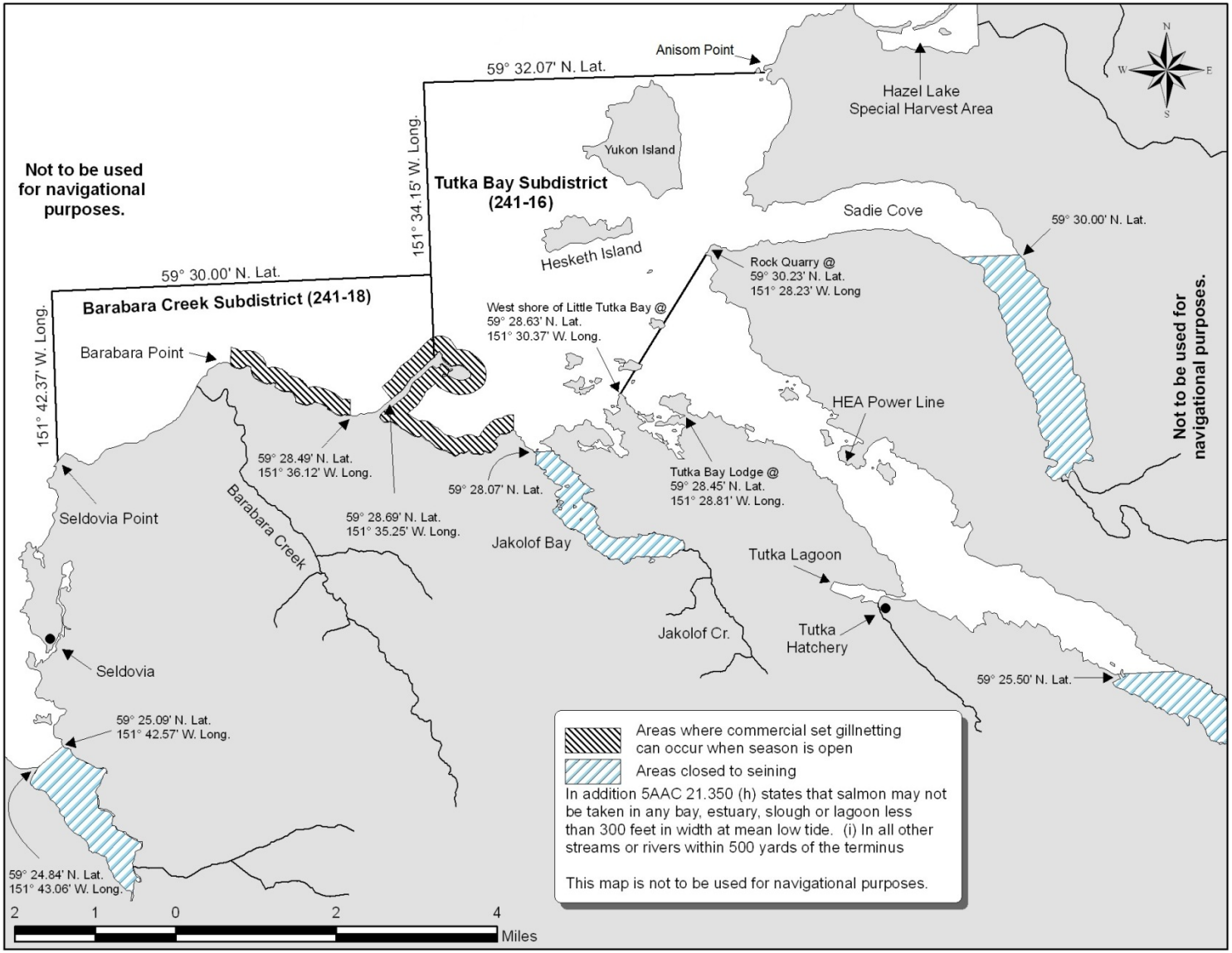


Figure 4.–Southern District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Anisom Point to Seldovia Point.

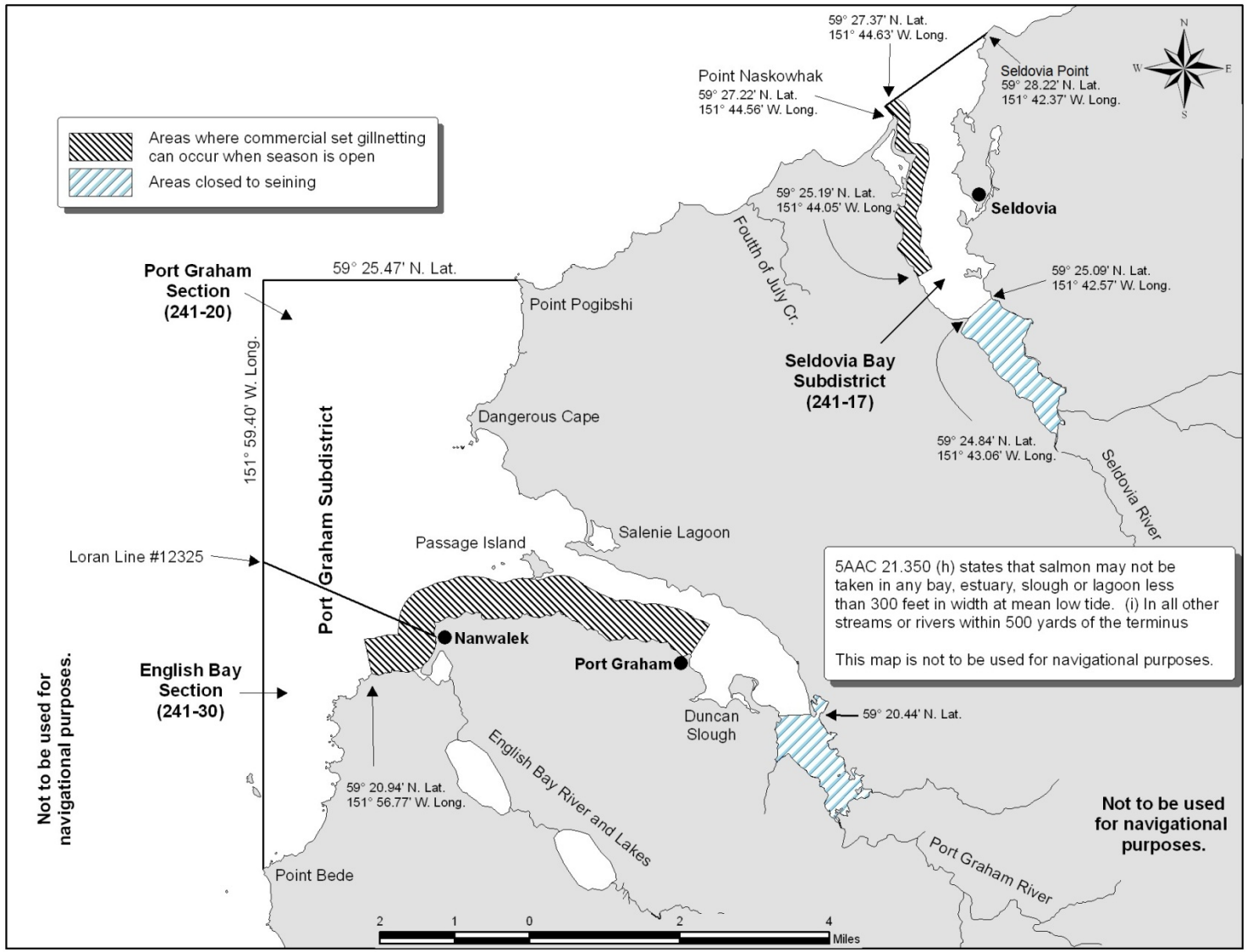


Figure 5.–Southern District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Seldovia Point to Point Bede.

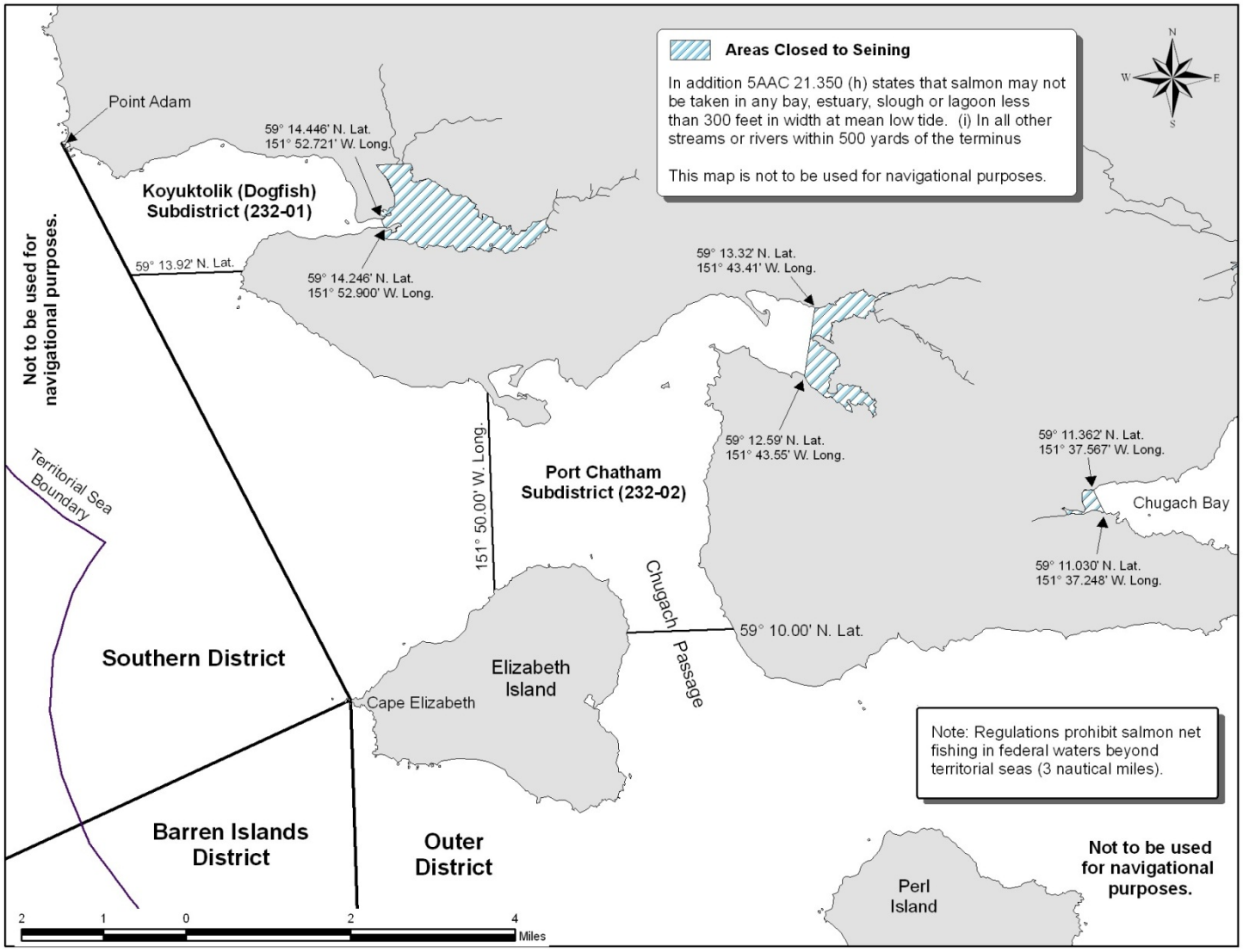


Figure 6.–Outer District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Point Adam to Chugach Bay.

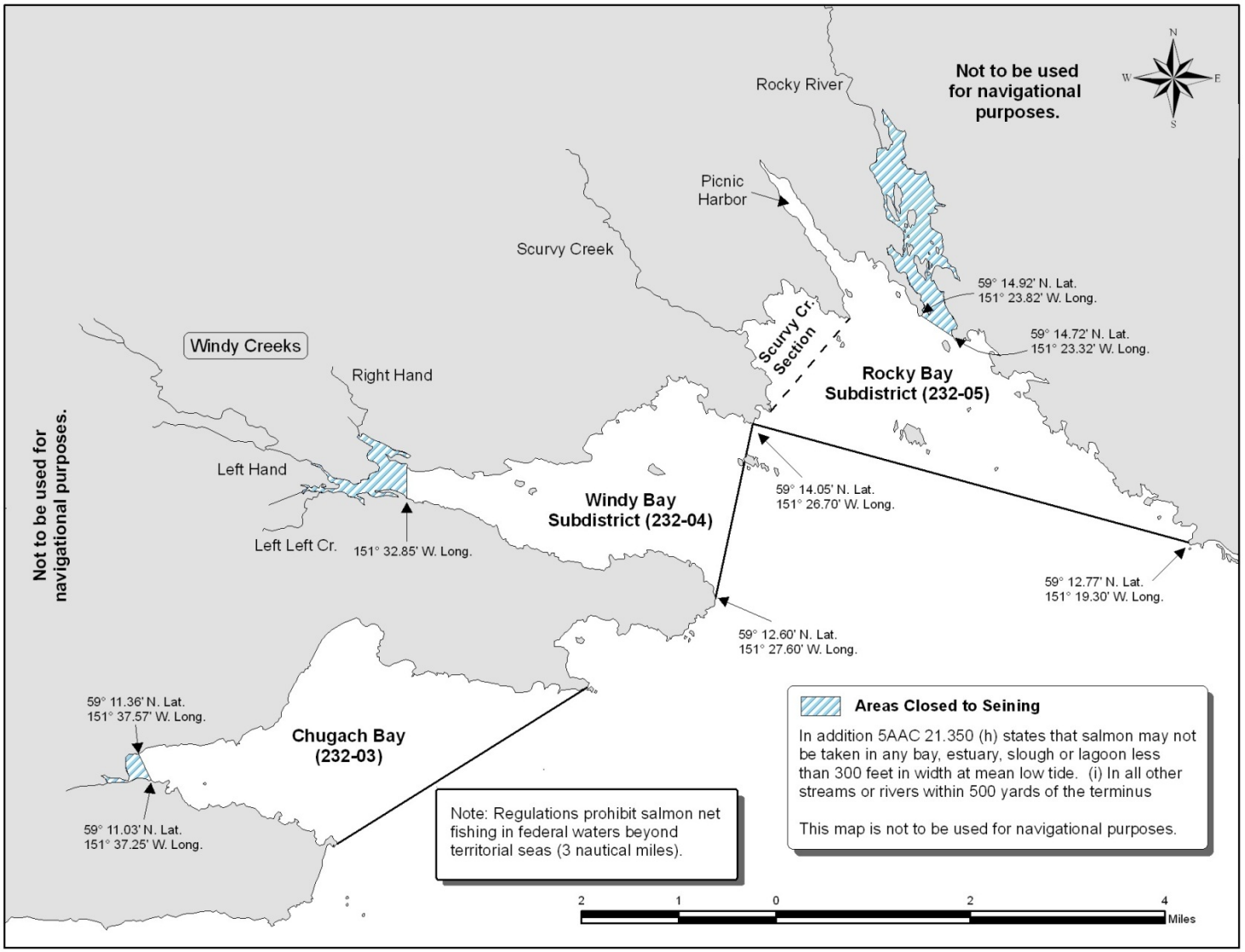


Figure 7.–Outer District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Chugach Bay to Rocky Bay.

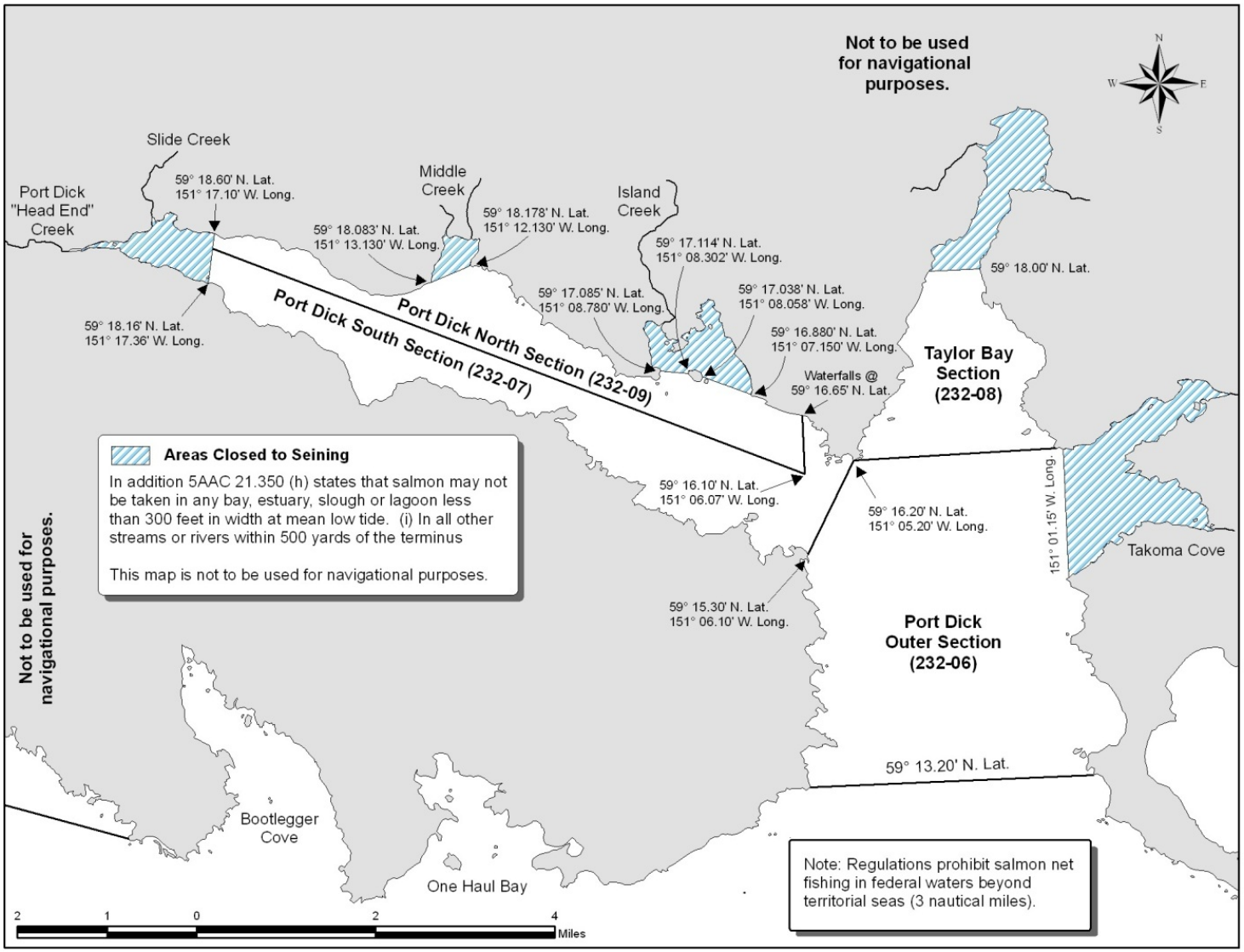


Figure 8.–Outer District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Port Dick area.

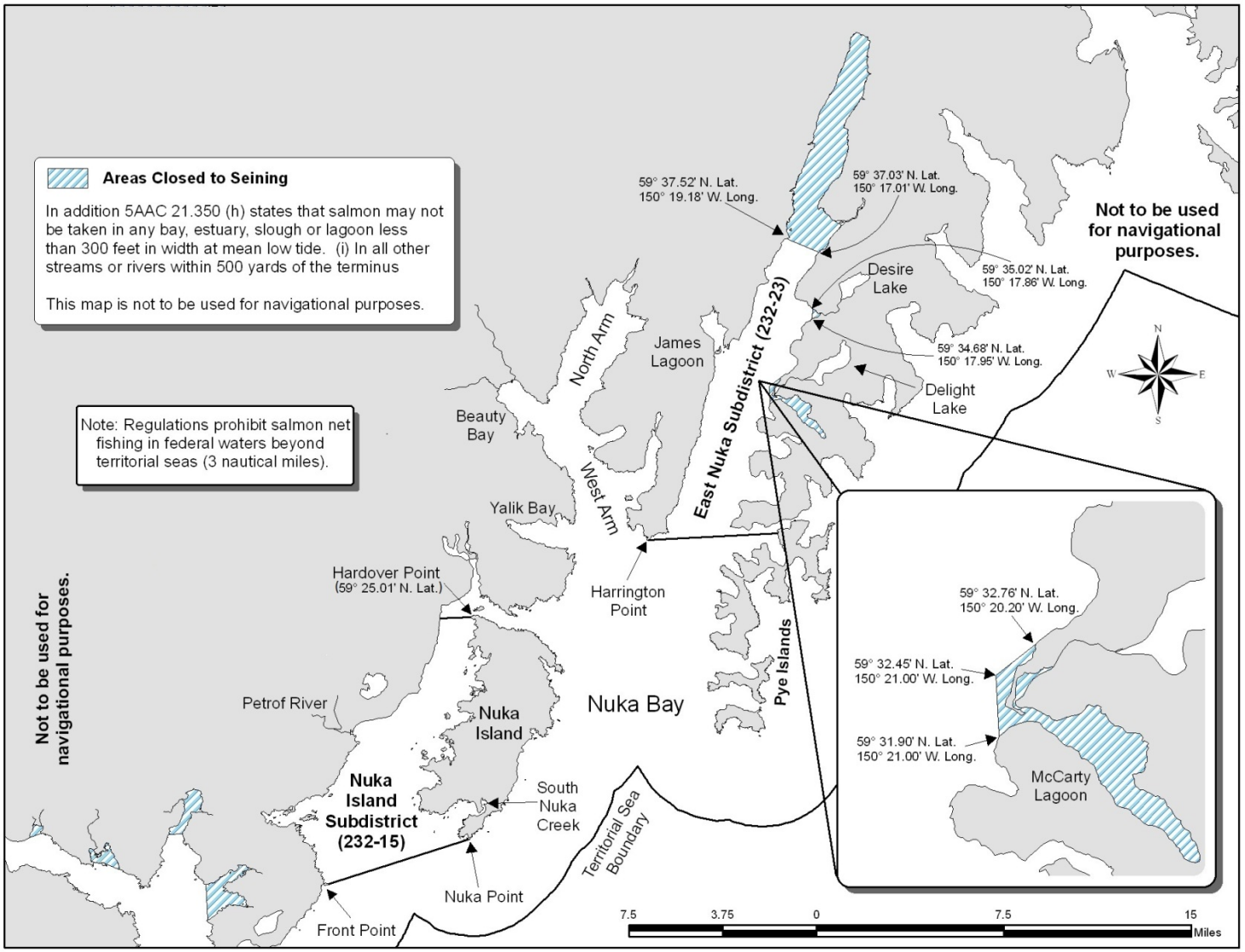


Figure 9.–Outer District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Nuka Bay area.

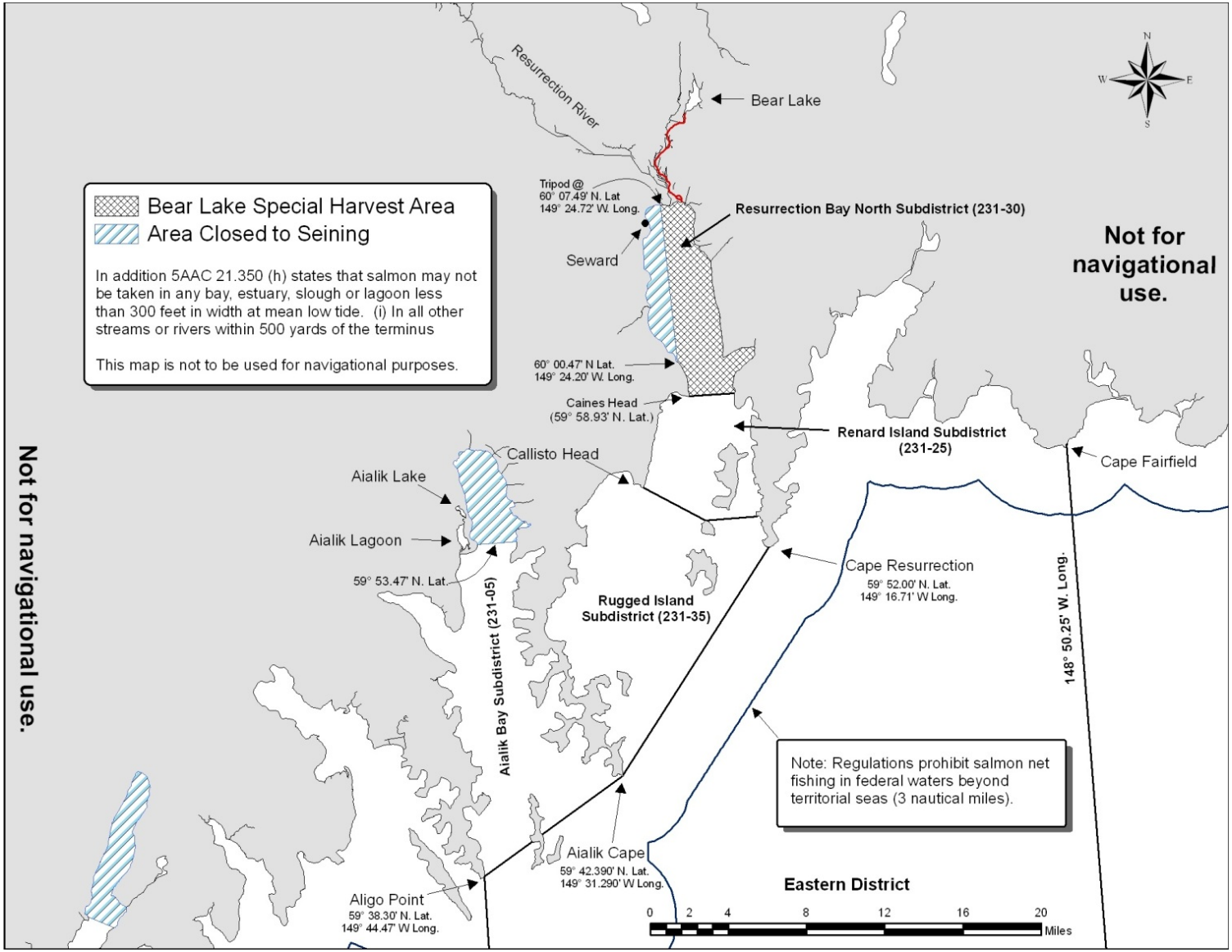


Figure 10.–Eastern District of Lower Cook Inlet management area showing commercial fishing districts, reporting subdistricts and hatchery special harvest area (SHA).

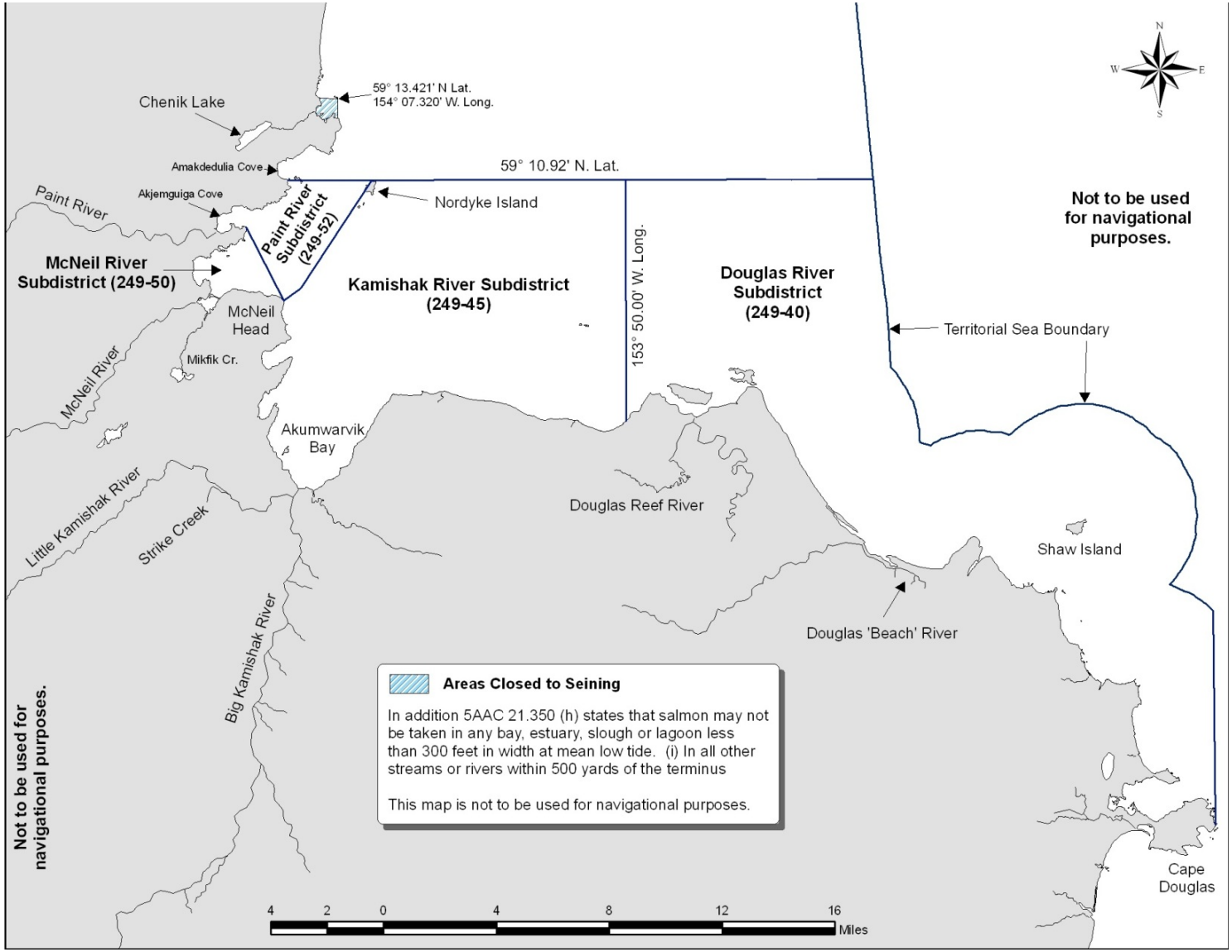


Figure 11.–Kamishak Bay District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, Chenik Lake to Cape Douglas.

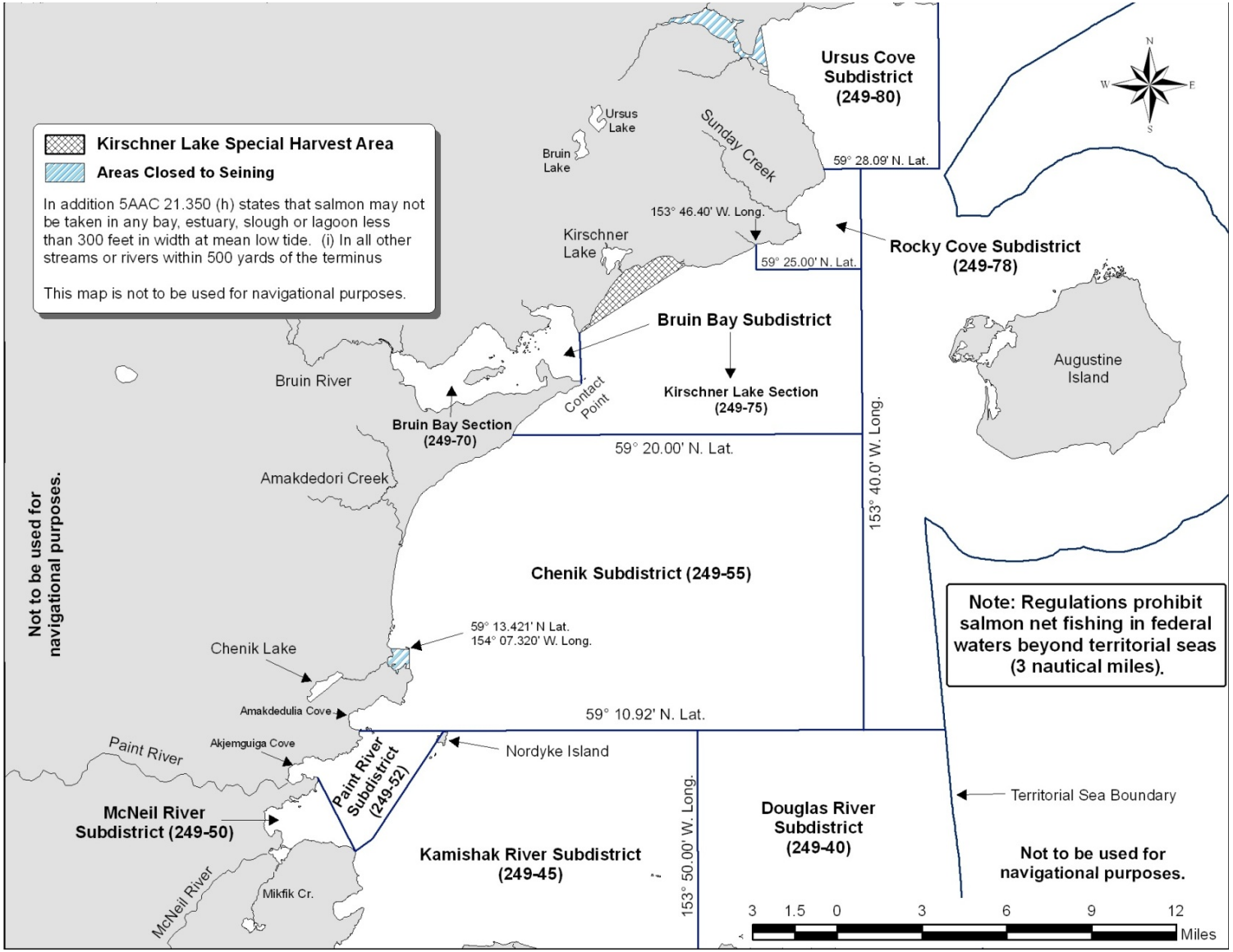


Figure 12.–Kamishak Bay District of Lower Cook Inlet management area showing commercial fishing districts and reporting subdistricts, McNeil River to Ursus Cove.

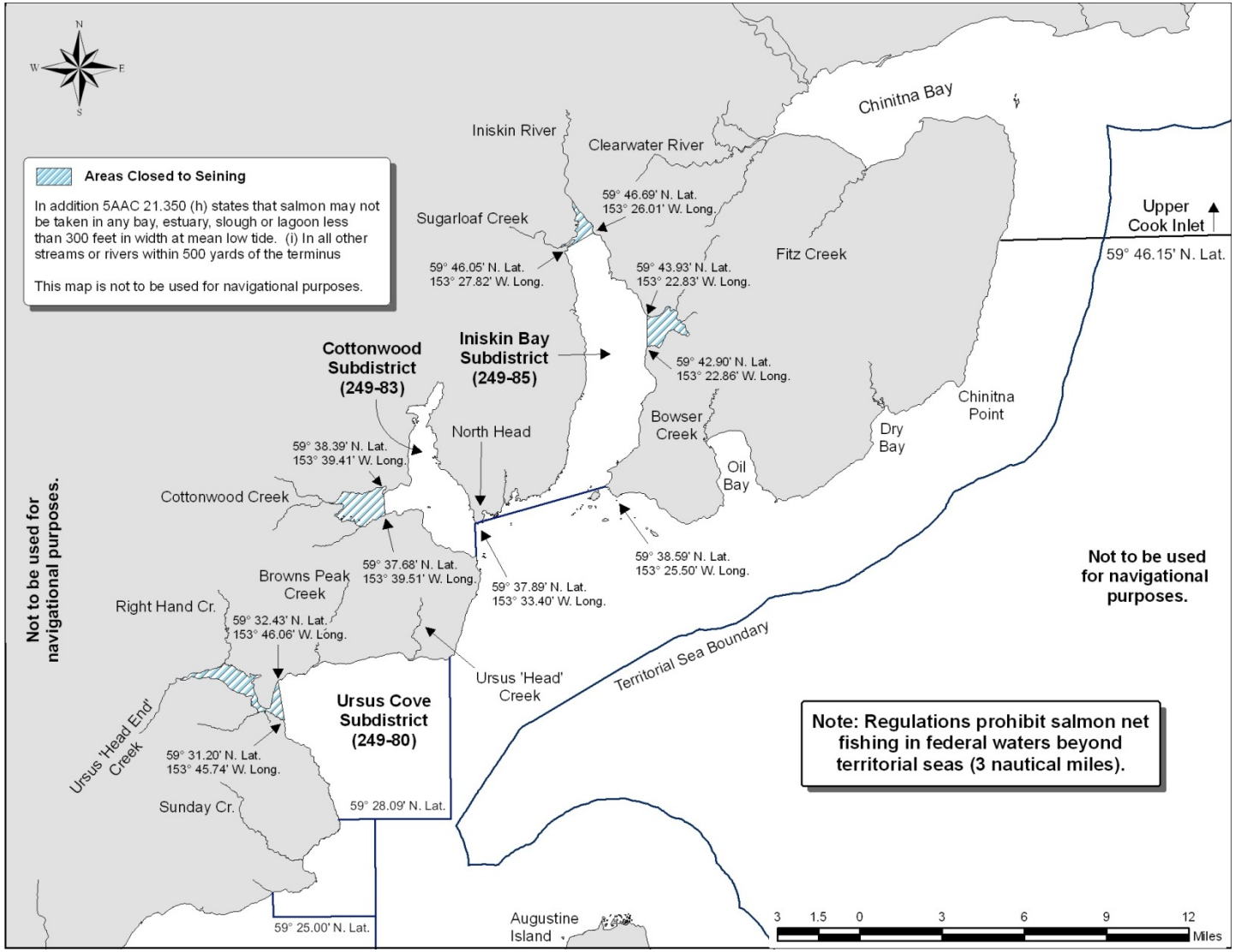


Figure 13.–Kamishak Bay District of Lower Cook Inlet management area showing commercial fishing districts, Ursus Cove to Chinitna Point.

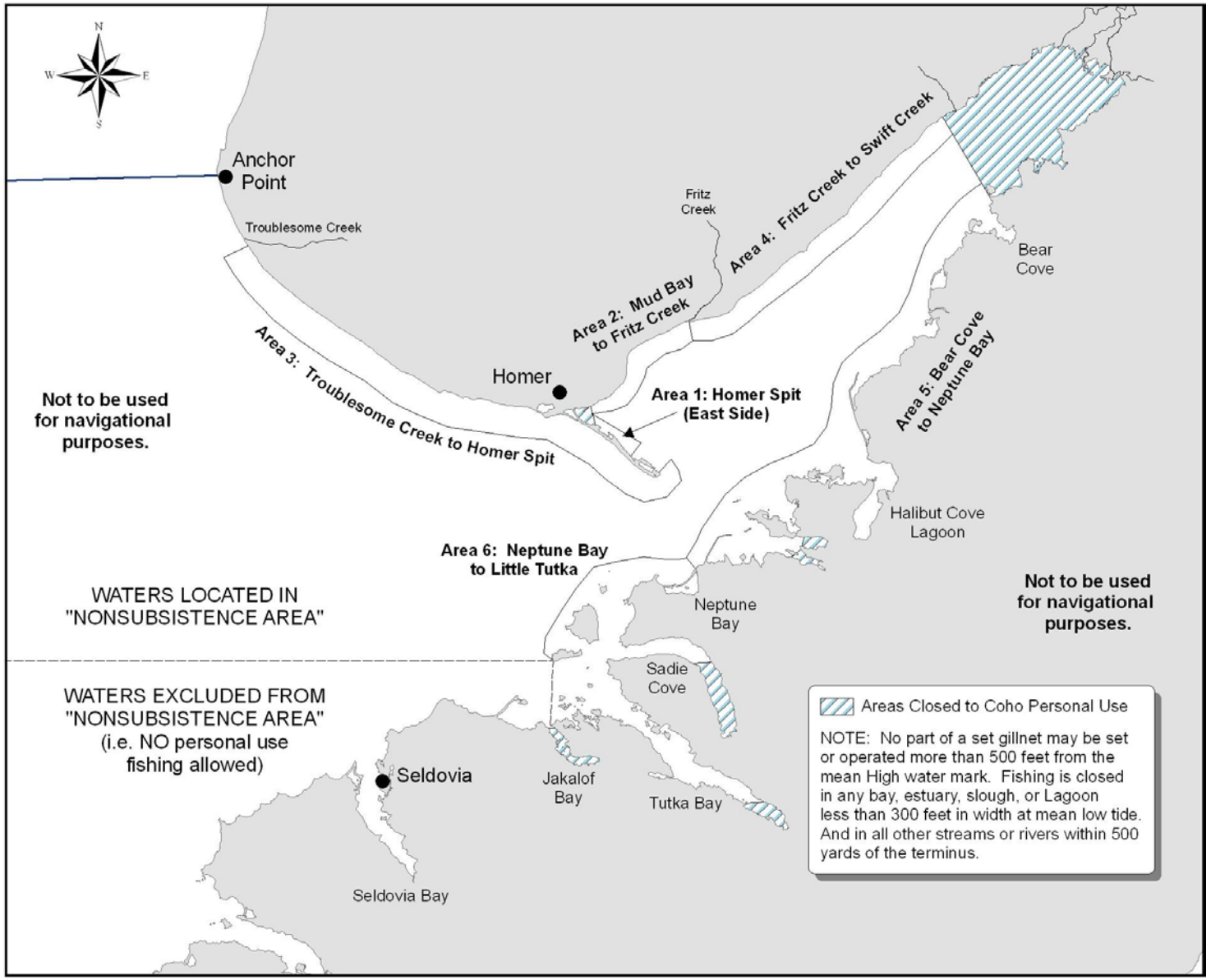


Figure 14.–Kachemak Bay personal use coho salmon fishery registration areas.

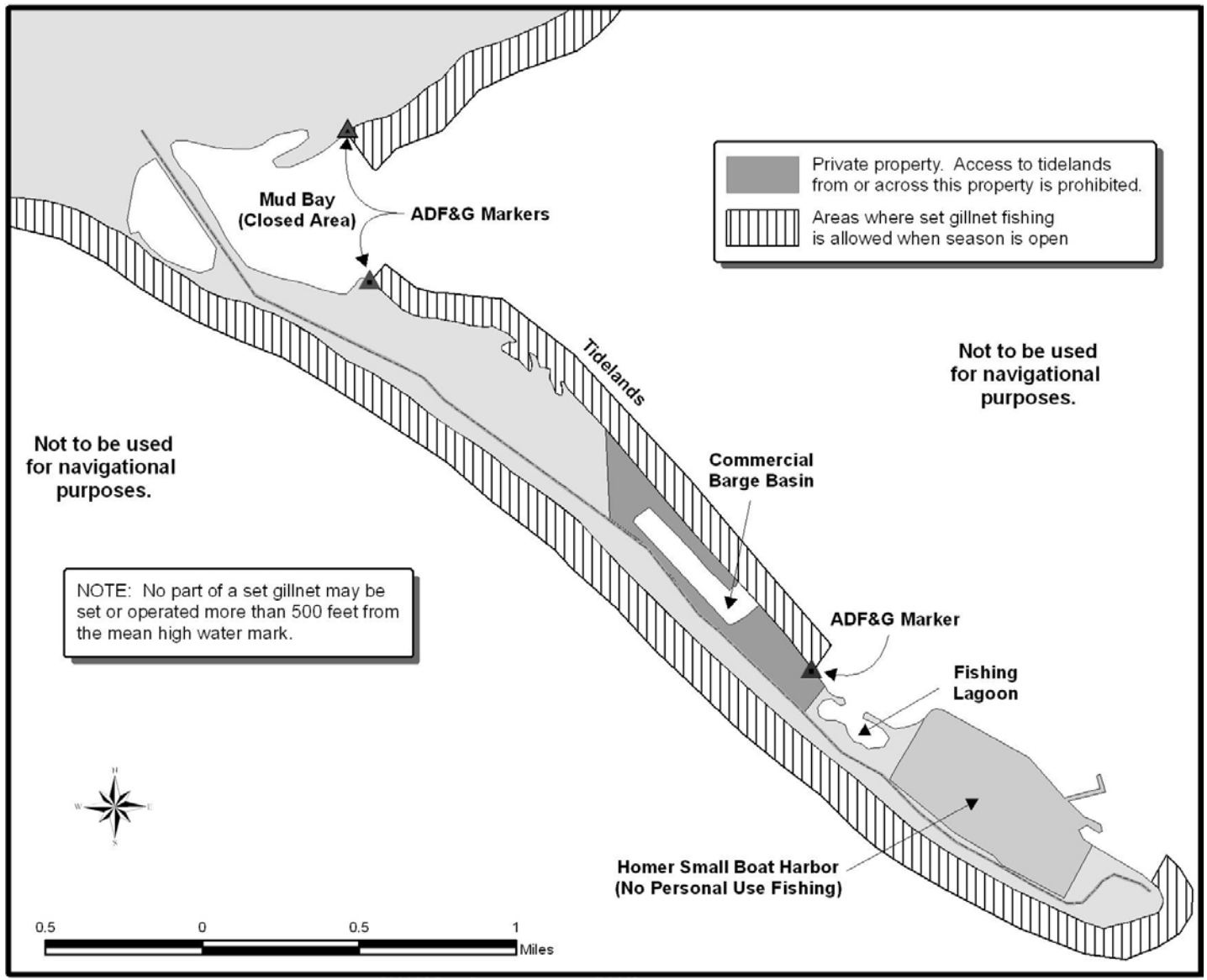


Figure 15.–Southern District personal use coho salmon fishery: Homer Spit area.

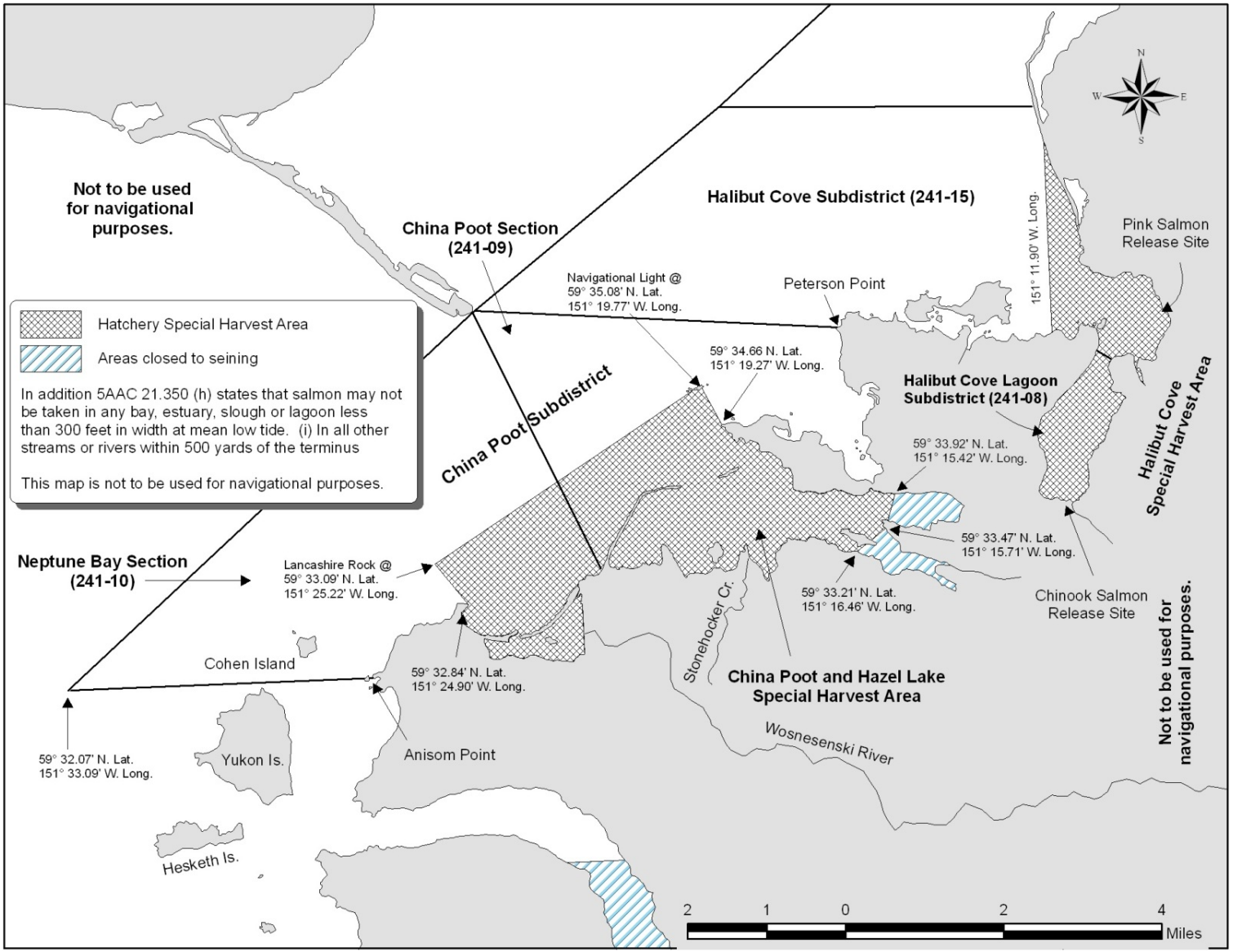


Figure 16.–Lower Cook Inlet management area, Southern District hatchery special harvest areas, Halibut Cove to Anisom Point.

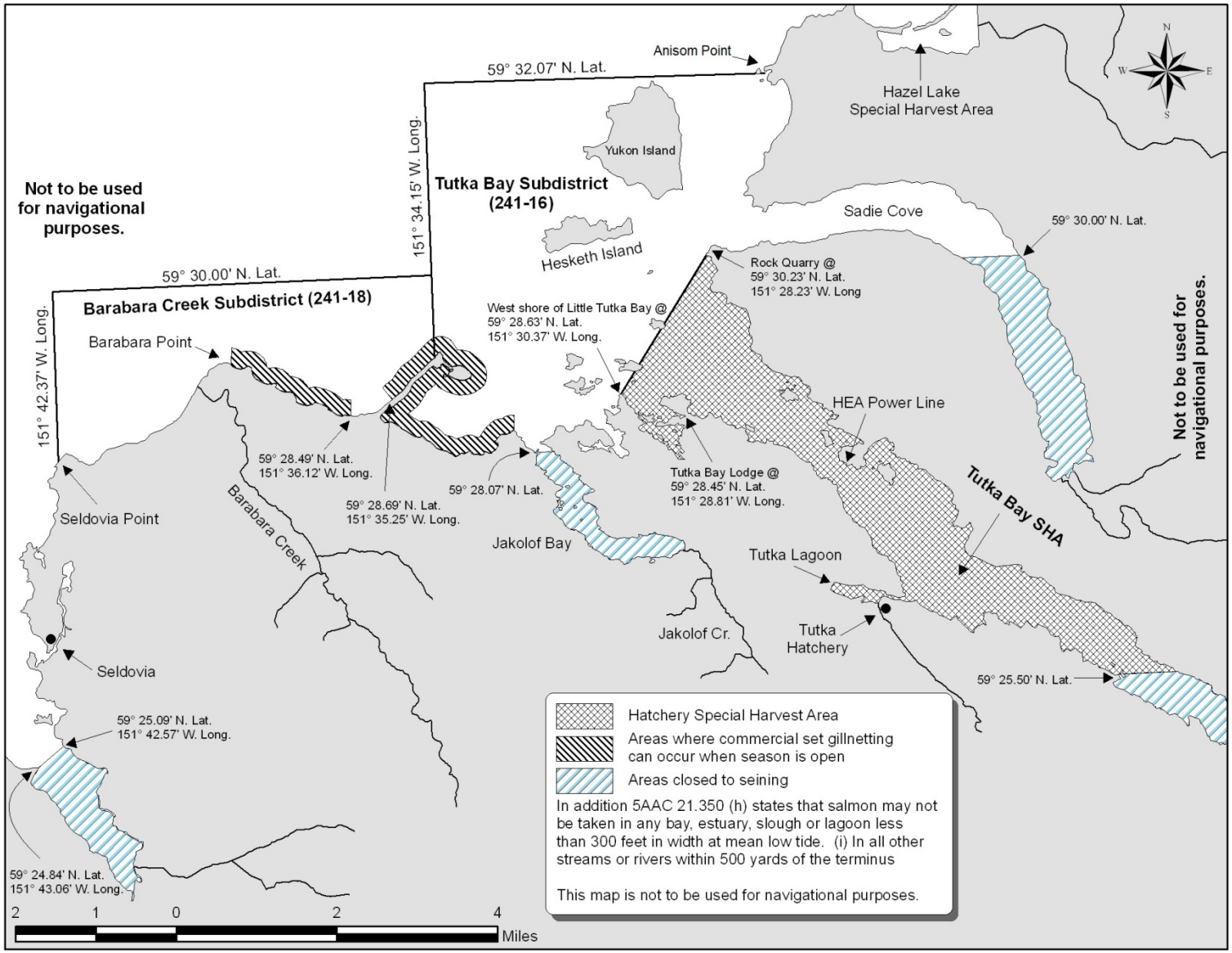


Figure 17.–Lower Cook Inlet management area, Southern District hatchery special harvest areas, Anisom Point to Seldovia Point.

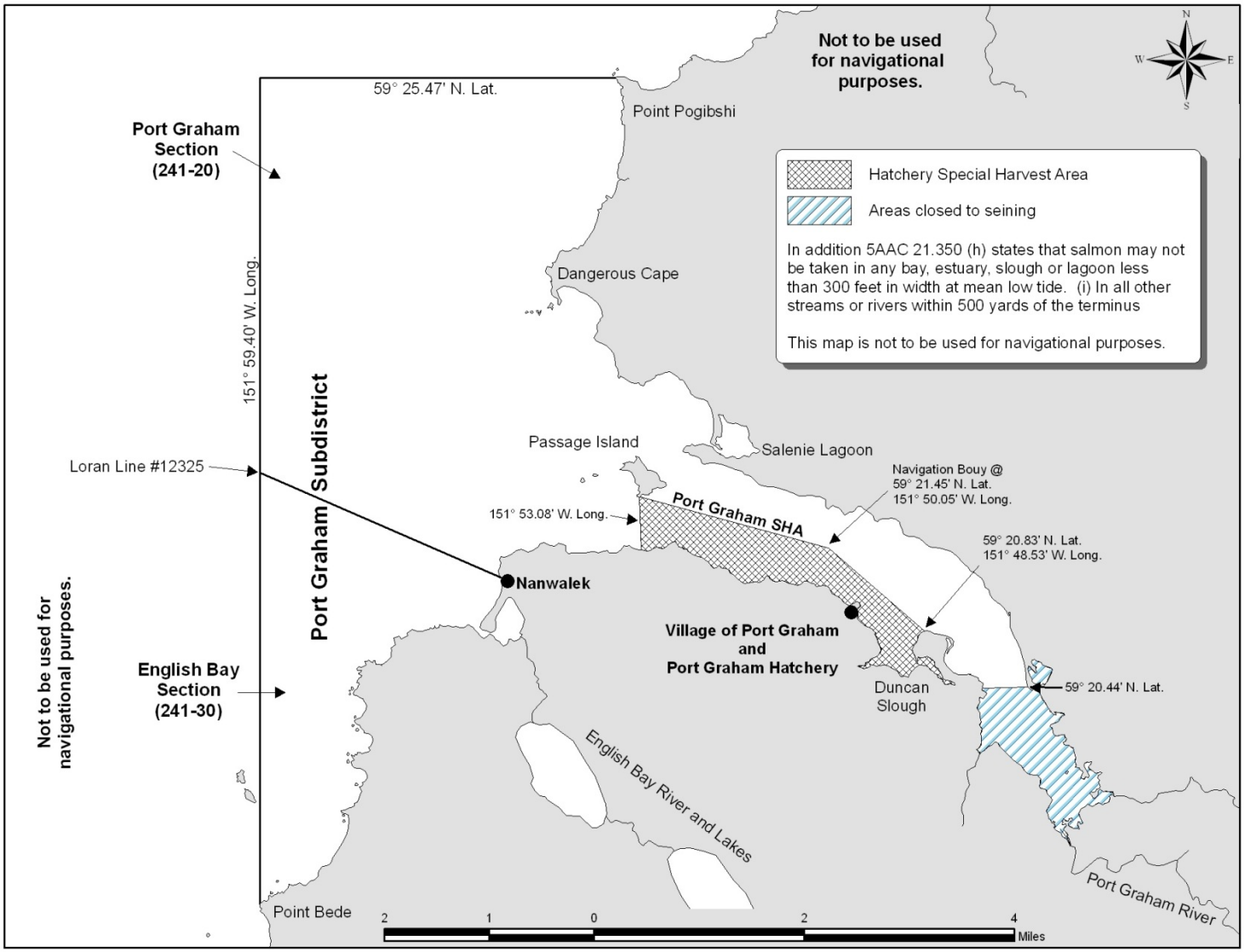


Figure 18.–Lower Cook Inlet management area, Southern District hatchery special harvest areas, Port Graham Area.

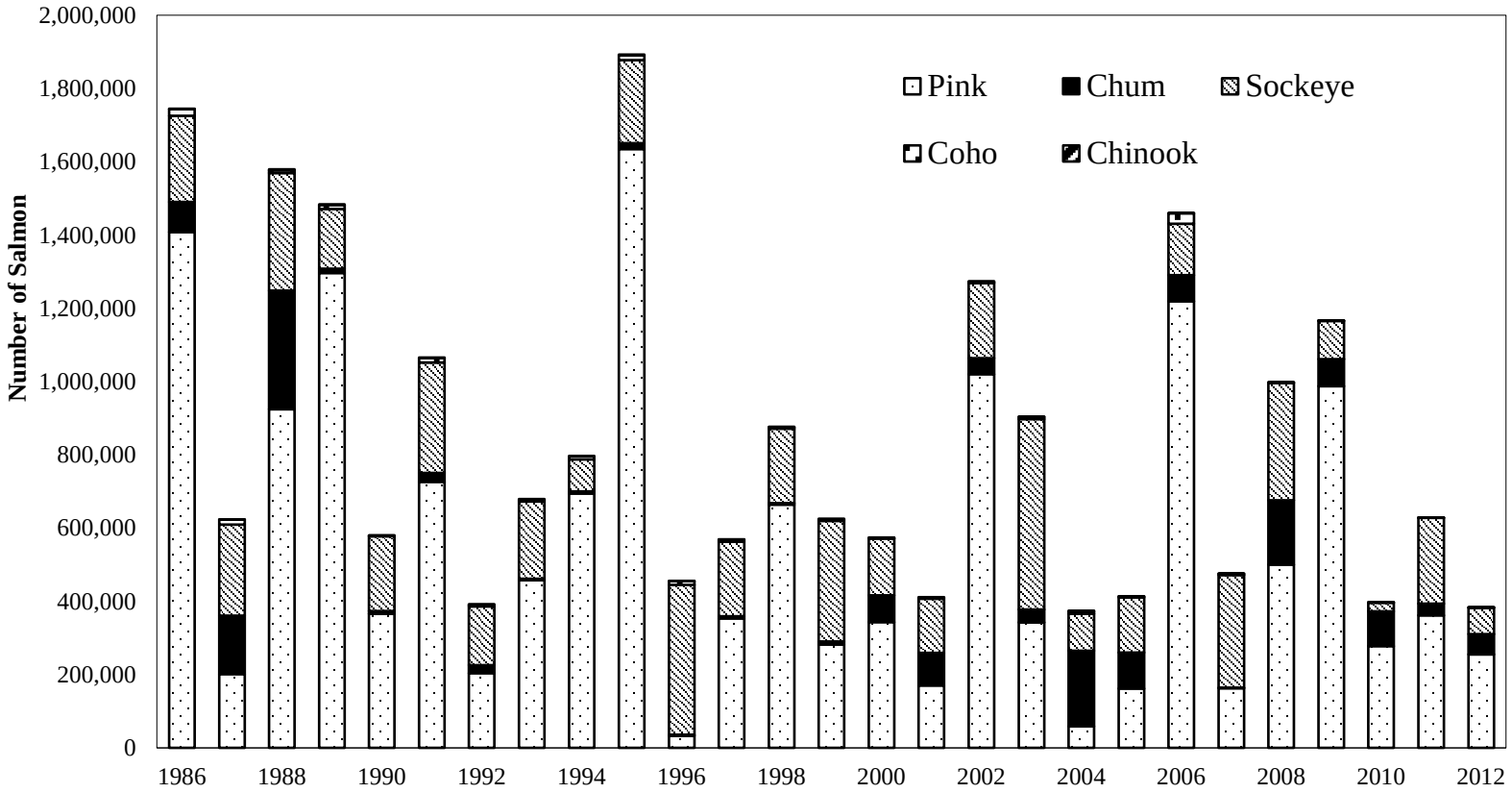


Figure 19.–Commercial common property salmon harvests in Lower Cook Inlet, 1986–2012.

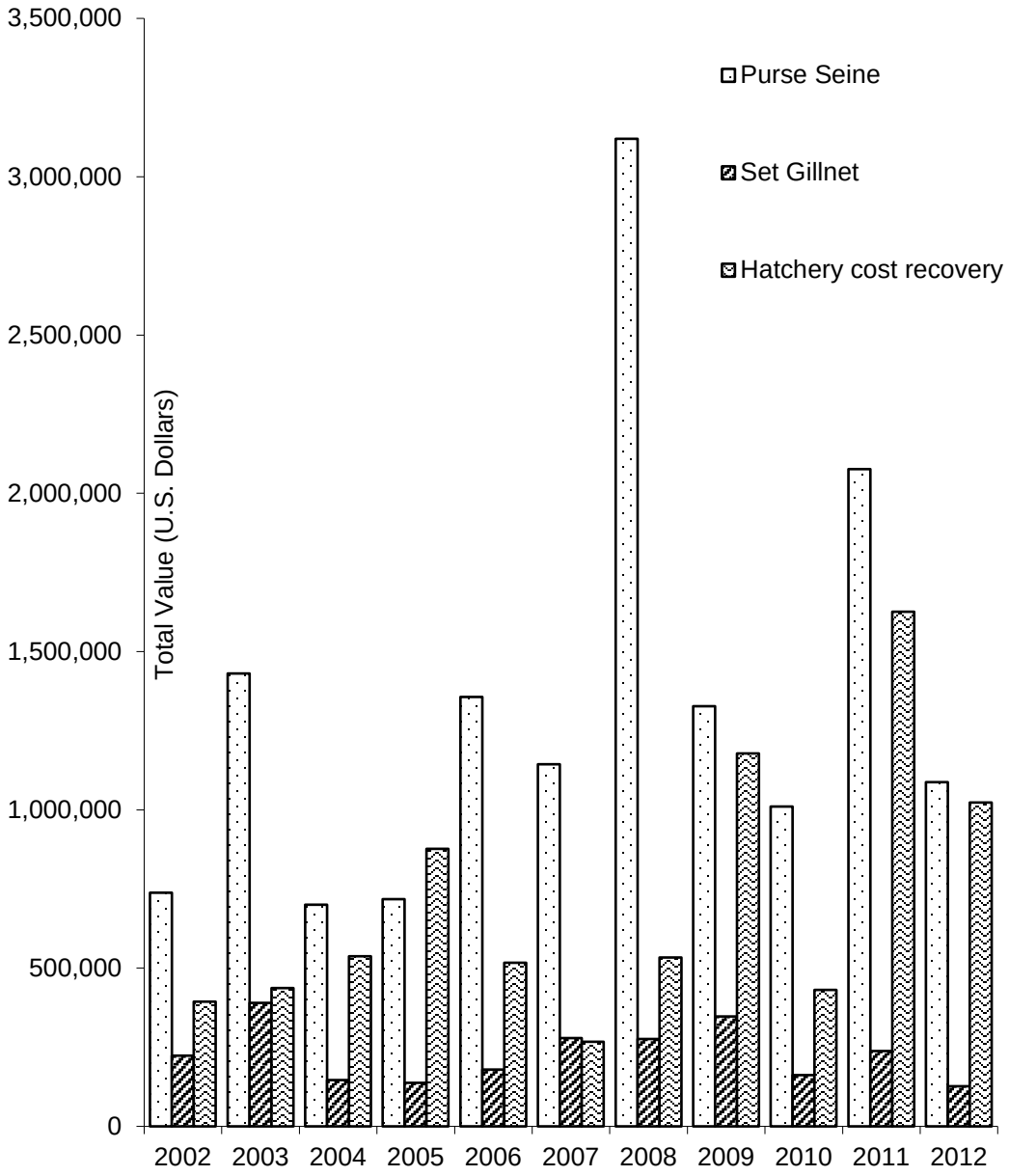
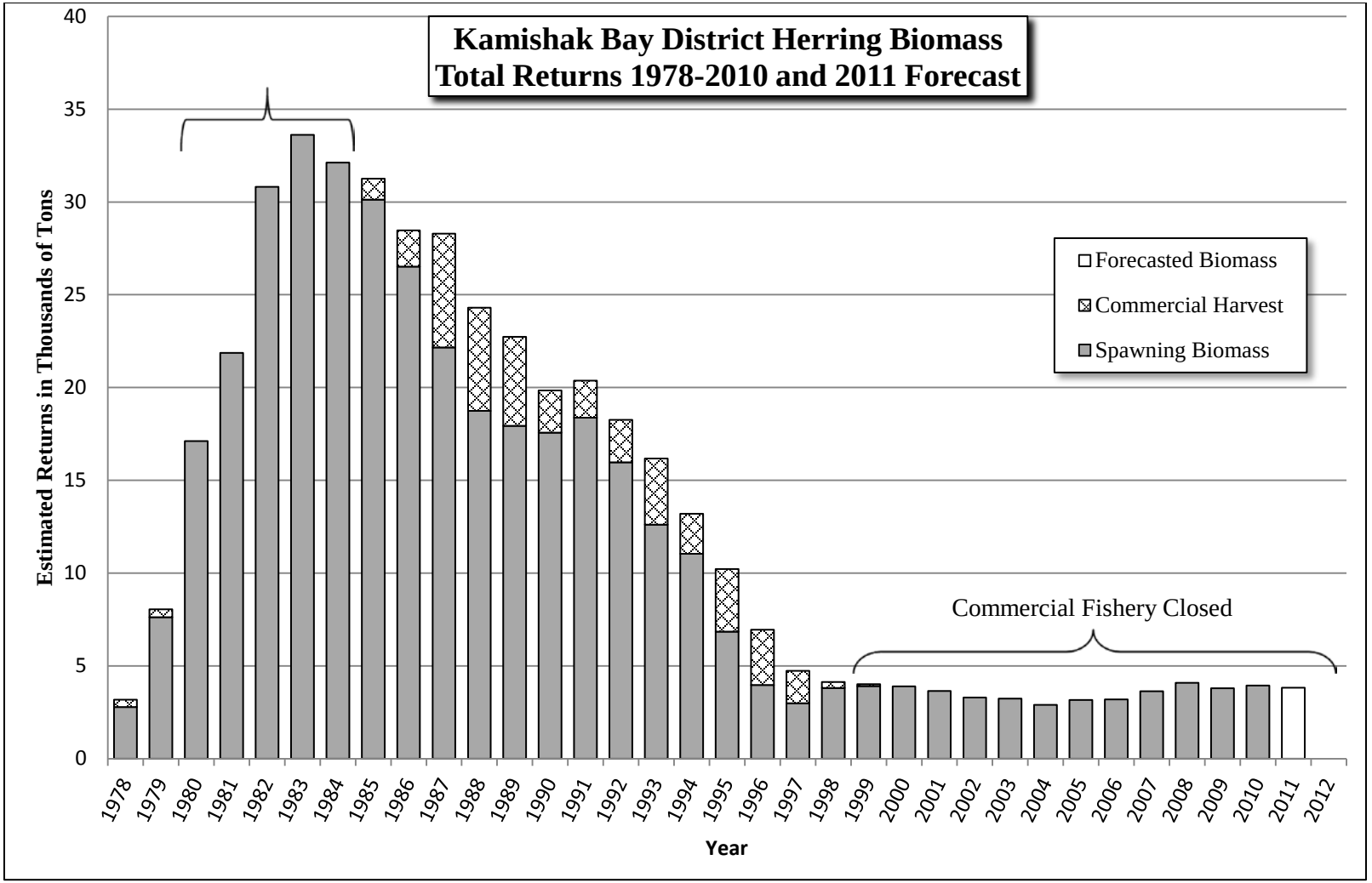


Figure 20.–Exvessel value of Lower Cook Inlet commercial salmon harvest, 2002–2012.



Note: No age-structured-assessment (ASA) biomass estimate possible for 2011 due to lack of age composition samples. All spawning biomass estimates derived from 2010 ASA calculations.

Figure 21.–Age-structured-assessment (ASA) biomass estimates and commercial harvests of Pacific herring in the sac roe seine fishery, Kamishak Bay District, Lower Cook Inlet, 1978–2010, and 2011 projection.

Table 1.–Lower Cook Inlet Management Area commercial salmon harvest by gear type and district, 2012.

District	Permits[a]	Chinook[a]	Sockeye[a]	Coho[a, b]	Pink[a]	Chum[a]	Total
Southern	11	39	6,396	44	175,770	439	182,688
Kamishak Bay	6	0	55,255	0	61	2,425	57,741
Outer	15	8	77	98	69,359	51,313	120,855
Eastern	0	0	0	0	0	0	0
Purse seine total	16	47	61,728	142	245,190	54,177	361,284
Southern District	15	86	10,260	33	10,305	927	21,611
Set gillnet total	15	86	10,260	33	10,305	927	21,611
Port Graham Hatchery			0	0	0	0	0
Tutka Bay Hatchery		0	30,984	7	757	1	31,749
Trail Lakes Hatchery		0	83,609	0	15	329	83,953
Hatchery total [c]		0	114,593	7	772	330	115,702
Home Pack	7	4	63	61	323	31	482
Donated Fish	1	0	0	0	0	1	1
Misc. Total		4	63	61	323	32	483
Lower Cook Inlet total		137	186,644	243	256,590	55,466	499,080

[a] Numbers of fish and numbers of permit holders delivering are from ADF&G fish ticket database.

[b] 1,400 coho salmon were harvested in the Seward Salmon Derby. These were sold by the sponsor to commercial processors. These fish were caught by sport permit holders using troll gear. This harvest is not included in the commercial harvest total catch.

[c] Hatchery sales for hatchery operating costs.

Table 2.–Total commercial salmon harvest by species from all gear types, Lower Cook Inlet area, including cost recovery for all Cook Inlet Area hatcheries, 1985–2012.

Year	Gear	n-permits[a]	Chinook[a]	Sockeye[a]	Coho[a]	Pink[a]	Chum[a]
1985	Purse Seine	51	85	255,234	5,585	1,206,819	26,421
1985	Set Gillnet	34	924	23,163	3,908	22,898	4,217
1985	Hatchery	0	0	0	0	0	0
	Total		1,009	278,397	9,493	1,229,717	30,638
1986	Purse Seine	61	51	213,054	15,258	1,394,049	80,262
1986	Set Gillnet	34	745	21,807	2,827	14,244	2,426
1986	Hatchery	0	0	0	0	0	0
	Total		796	234,861	18,085	1,408,293	82,688
1987	Purse Seine	67	526	220,648	10,970	192,207	156,965
1987	Set Gillnet	29	653	28,209	2,025	9,224	2,419
1987	Hatchery	0	0	0	0	0	0
	Total		1,179	248,857	12,995	201,431	159,384
1988	Purse Seine	72	549	306,309	4,742	895,420	319,768
1988	Set Gillnet	27	1,145	14,758	2,819	29,268	4,423
1988	Hatchery	0	0	0	0	0	0
	Total		1,694	321,067	7,561	924,688	324,191
1989	Purse Seine	65	612	149,301	5,864	1,280,716	9,428
1989	Set Gillnet	23	1,281	13,970	4,792	16,210	1,877
1989	Hatchery	0	0	0	0	0	0
	Total		1,893	163,271	10,656	1,296,926	11,305
1990	Purse Seine	71	199	188,032	733	353,781	5,013
1990	Set Gillnet	20	1,361	15,863	1,046	12,646	1,938
1990	Hatchery	0	0	0	5,876	17,243	0
	Total		1,560	203,895	7,655	383,670	6,951
1991	Purse Seine	68	576	281,250	7,068	722,535	22,623
1991	Set Gillnet	20	842	20,525	5,011	3,954	1,577
1991	Hatchery	0	0	0	0	0	0
	Total		1,418	301,775	12,079	726,489	24,200
1992	Purse Seine	61	603	143,537	3,049	187,853	20,511
1992	Set Gillnet	20	1,288	17,002	848	15,958	1,687
1992	Hatchery	0	0	16,105	1,528	275,957	5
	Total		1,891	176,644	5,425	479,768	22,203
1993	Purse Seine	51	1,079	195,896	1,710	445,283	1,776
1993	Set Gillnet	17	1,089	14,791	3,088	12,008	2,591
1993	Hatchery	0	0	0	0	0	0
	Total		2,168	210,687	4,798	457,291	4,367
1994	Purse Seine	30	127	73,543	7,024	670,944	3,049
1994	Set Gillnet	16	1,103	14,004	1,073	23,621	2,419
1994	Hatchery	0	1	27,871	4,968	953,364	1
	Total		1,231	115,418	13,065	1,647,929	5,469
1995	Purse Seine	46	225	207,237	9,867	1,593,453	11,676
1995	Set Gillnet	23	2,078	19,406	3,564	41,654	3,958
1995	Hatchery	0	0	38,780	1,318	1,213,357	2
	Total		2,303	265,423	14,749	2,848,464	15,636

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Table 2.–Page 2 of 3.

Year	Gear	n-permits [a]	Chinook [a]	Sockeye [a]	Coho [a]	Pink [a]	Chum [a]
1996	Purse Seine	34	126	339,626	3,892	17,546	946
1996	Set Gillnet	24	1,054	69,338	5,779	14,813	2,792
1996	Hatchery	0	1	41,492	1,334	420,431	26
	Total		1,181	450,456	11,005	452,790	3,764
1997	Purse Seine	23	126	144,091	1,185	288,969	1,736
1997	Set Gillnet	25	1,135	59,401	4,475	64,162	4,166
1997	Hatchery	0	0	36,681	3,177	2,461,300	6
	Total		1,261	240,173	8,837	2,814,431	5,908
1998	Purse Seine	39	119	177,250	2,325	639,505	883
1998	Set Gillnet	24	952	26,131	1,057	24,403	3,754
1998	Hatchery	0	0	80,648	10,717	793,911	10
	Total		1,071	284,029	14,099	1,457,819	4,647
1999	Purse Seine	43	273	302,070	2,873	276,742	3,606
1999	Set Gillnet	20	1,491	27,646	1,374	5,348	4,335
1999	Hatchery	0	0	147,063	2,502	858,398	0
	Total		1,764	476,779	6,749	1,140,488	7,941
2000	Purse Seine	36	168	129,133	506	321,342	67,769
2000	Set Gillnet	24	1,019	26,503	621	21,845	5,214
2000	Hatchery	0	1	66,693	169	1,044,119	271
	Total		1,188	222,329	1,296	1,387,306	73,254
2001	Purse Seine	25	123	119,806	909	156,657	85,473
2001	Set Gillnet	18	865	28,503	1,811	13,393	3,487
2001	Hatchery	0	0	60,619	34	422,881	9
	Total		988	208,928	2,754	592,931	88,969
2002	Purse Seine	25	40	158,284	1,502	1,013,649	38,541
2002	Set Gillnet	24	1,513	46,812	2,393	6,741	4,681
2002	Hatchery	0	0	84,194	311	949,671	37
	Total		1,553	289,290	4,206	1,970,061	43,259
2003	Purse Seine	27	302	438,236	3,121	335,147	30,625
2003	Set Gillnet	24	878	81,722	2,291	7,325	4,998
2003	Hatchery	0	0	122,024	253	513,649	63
	Total		1,180	641,982	5,665	856,121	35,686
2004	Purse Seine	24	258	84,633	5,647	57,878	205,445
2004	Set Gillnet	19	1,400	16,087	1,164	834	1,234
2004	Hatchery	0	0	29,363	0	2,458,843	0
	Total		1,658	130,083	6,811	2,517,555	206,679
2005	Purse Seine	29	85	134,649	914	161,255	97,274
2005	Set Gillnet	17	525	15,669	1,905	341	1,326
2005	Hatchery	0	0	81,058	1	2,144,818	2
	Total		610	231,376	2,820	2,306,414	98,602
2006	Purse Seine	24	50	125,878	26,019	1,206,631	69,810
2006	Set Gillnet	22	580	14,219	2,426	12,288	2,019
2006	Hatchery	0	0	83,464	0	252,658	125
	Total		630	223,561	28,445	1,471,577	71,954
2007	Purse Seine	19	28	278,570	1,827	162,762	266
2007	Set Gillnet	16	439	28,870	1,616	0	1,437
2007	Hatchery	0	0	58,514	26	124,649	74
	Total		467	365,954	3,469	287,411	1,777

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Table 2.–Page 3 of 3.

Year	Gear	n-permits [a]	Chinook [a]	Sockeye [a]	Coho [a]	Pink [a]	Chum [a]
2008	Purse Seine	25	42	293,363	740	498,930	174,128
2008	Set Gillnet	18	148	26,819	599	1,884	1,394
2008	Hatchery	0	0	87,208	2	4,886	208
	Total		190	407,390	1,341	505,700	175,730
2009	Purse Seine	13	1	65,771	9	985,451	71,700
2009	Set Gillnet	19	83	38,220	968	2,136	2,274
2009	Hatchery	0	0	175,539	1	1,760	0
	Total		84	279,530	978	989,347	73,974
2010	Purse Seine	14	10	8,615	589	274,859	93,245
2010	Set Gillnet	21	29	14,765	171	3,106	1,503
2010	Hatchery	0	0	69,219	31	246	7
	Total		39	92,599	791	278,211	94,755
2011	Purse Seine	23	36	211,700	49	359,058	29,741
2011	Set Gillnet	21	100	22,782	103	2,643	1,946
2011	Hatchery	0	0	158,272	0	205	4
	Total		136	392,754	152	361,906	31,691
Previous 10-yr Average	Purse Seine	22	85	179,970	4,042	505,562	81,078
	Set Gillnet	20	570	30,597	1,364	3,730	2,281
	Hatchery	0	0	94,886	63	645,139	52
	Total	42	655	305,452	5,468	1,154,430	83,411
2012	Purse Seine	16	47	61,728	142	245,190	54,177
2012	Set Gillnet	15	86	10,260	33	10,305	927
2012	Hatchery	0	0	114,592	7	772	330
	Total		133	186,580	182	256,267	55,434

[a] Numbers of fish and numbers of permit holders delivering are from ADF&G fish ticket database. These numbers do not include homepacks, donated fish, or sport caught fish from the Seward salmon derby that were later sold.

Table 3.–Mean price and estimated exvessel value of the total commercial salmon harvest by gear type, Lower Cook Inlet, 2012.

Purse Seine

Species	Number [a]	Pounds [a]	Average Weight	Price [a]	Value
Chinook	47	232	4.94	$2.08	$483
Sockeye	61,728	290,126	4.70	$1.59	$461,300
Coho	142	941	6.63	$0.75	$706
Pink	245,190	771,775	3.15	$0.39	$300,992
Chum	54,177	462,747	8.54	$0.70	$323,923
	361,284	1,525,821			$1,087,404

Set Gillnet

Species	Number [a]	Pounds [a]	Average Weight	Price [a]	Value
Chinook	86	1,070	12.44	$4.53	$4,847
Sockeye	10,260	60,848	5.93	$1.80	$109,526
Coho	33	189	5.73	$1.06	$200
Pink	10,305	40,296	3.91	$0.25	$10,074
Chum	927	6,833	7.37	$0.37	$2,528
	21,611	109,236			$127,176

Hatchery Sales

Species	Number [a]	Pounds [a]	Average Weight	Price [a]	Value
Chinook	0	0	0	$0.00	$0
Sockeye	114,592	576,907	5.03	$1.77	$1,021,125
Coho	7	58	8.29	$0.75	$44
Pink	772	2,755	3.57	$0.39	$1,074
Chum	330	2,585	7.83	$0.40	$1,034
	115,701	582,305			$1,023,277

Total Harvest

Species	Number [a]	Pounds [a]	Average Weight	Price [a]	Value
Chinook	133	1,302	9.79	$4.09	5,330
Sockeye	186,580	927,881	4.97	$1.72	1,591,952
Coho	182	1,188	6.53	$0.80	950
Pink	256,267	814,826	3.18	$0.38	312,141
Chum	55,434	472,165	8.52	$0.69	327,485
	498,596	2,217,362			$2,237,857

Gear Type	Value of Catch	No. of Permits [a]	Average Earnings
Purse Seine	$1,087,404	16	$67,963
Set Gillnet	$127,176	15	$8,478
Subtotal- Value of CPF Catch	$1,214,580		
Hatchery	$1,023,277		
Grand Total	$2,237,857		

[a] Mean prices are based on weighted average prices from ADF&G fish ticket database. Pounds and numbers of fish are based on fish ticket reporting.

Table 4.–Average price paid to permit holders for salmon, Lower Cook Inlet, 1985–2012.

	Chinook salmon			Sockeye salmon			Coho salmon			Pink salmon			Chum salmon		
		Set			Set			Set			Set			Set	
Year	Seine	Gillnet	Both	Seine	Gillnet	Both	Seine	Gillnet	Both	Seine	Gillnet	Both	Seine	Gillnet	Both
1985	$1.53	$1.41	$1.41	$1.26	$1.28	$1.27	$0.81	$0.80	$0.80	$0.22	$0.22	$0.22	$0.43	$0.43	$0.43
1986	$1.10	$1.25	$1.25	$1.64	$1.42	$1.51	$0.84	$0.60	$0.62	$0.15	$0.16	$0.15	$0.34	$0.41	$0.38
1987	NA	NA	$1.25	NA	$1.82	$1.82	NA	NA	$1.00	NA	NA	$0.42	NA	NA	$0.84
1988	NA	NA	$1.25	NA	NA	$2.35	NA	NA	$1.80	NA	NA	$0.70	NA	NA	$0.46
1989	NA	$1.70	$1.70	NA	$1.96	$1.96	NA	NA	$0.70	NA	$0.30	$0.30	NA	$0.58	$0.58
1990	NA	NA	$1.35	$1.38	$1.89	$1.88	$0.50	$0.84	$0.84	$0.35	$0.30	$0.32	$0.40	$0.55	$0.55
1991	NA	$1.53	$1.53	NA	$1.45	$1.45	NA	NA	$0.29	NA	$0.25	$0.25	NA	$0.41	$0.41
1992	$0.97	$1.41	$1.29	$1.45	$1.46	$1.45	$0.43	$0.50	$0.44	$0.15	$0.15	$0.15	$0.26	$0.33	$0.27
1993	$0.89	$1.10	$1.02	$0.78	$1.00	$0.80	$0.42	$0.58	$0.52	$0.14	$0.13	$0.14	$0.30	$0.26	$0.28
1994	$0.90	$0.96	$0.95	$1.12	$1.23	$1.14	$0.66	$0.71	$0.66	$0.16	$0.15	$0.16	$0.15	$0.35	$0.25
1995	$0.85	$1.19	$1.17	$1.11	$1.20	$1.11	$0.47	$0.53	$0.49	$0.15	$0.16	$0.15	$0.23	$0.26	$0.24
1996	$0.76	$1.37	$1.32	$0.90	$1.00	$0.92	$0.29	$0.40	$0.36	$0.05	$0.06	$0.05	$0.15	$0.19	$0.18
1997	$0.69	$1.32	$1.29	$0.81	$0.84	$0.82	$0.29	$0.49	$0.46	$0.11	$0.10	$0.11	$0.19	$0.25	$0.23
1998	$0.68	$1.58	$1.58	$0.98	$1.01	$0.99	$0.55	$0.66	$0.60	$0.13	$0.14	$0.13	$0.19	$0.29	$0.28
1999	$0.97	$2.07	$2.04	$1.32	$1.67	$1.41	$0.45	$0.70	$0.62	$0.13	$0.16	$0.14	$0.10	$0.43	$0.35
2000	$0.75	$1.94	$1.86	$0.98	$1.01	$0.98	$0.45	$0.54	$0.49	$0.09	$0.15	$0.09	$0.29	$0.18	$0.28
2001	$0.75	$1.87	$1.76	$0.64	$0.73	$0.66	$0.30	$0.43	$0.39	$0.09	$0.05	$0.09	$0.36	$0.20	$0.35
2002	$0.30	$1.12	$1.10	$0.56	$0.68	$0.58	$0.17	$0.25	$0.22	$0.06	$0.03	$0.06	$0.16	$0.19	$0.16
2003	$0.25	$1.14	$1.02	$0.61	$0.74	$0.64	$0.20	$0.11	$0.16	$0.05	$0.02	$0.05	$0.15	$0.20	$0.15
2004	$0.33	$1.68	$1.56	$0.80	$1.16	$0.86	$0.44	$0.52	$0.45	$0.05	$0.07	$0.05	$0.20	$0.21	$0.20
2005	$0.83	$1.65	$1.54	$0.87	$1.30	$0.93	$0.29	$0.53	$0.45	$0.08	$0.10	$0.08	$0.22	$0.24	$0.22
2006	$0.50	$2.41	$2.26	$1.10	$1.74	$1.18	$0.50	$0.82	$0.53	$0.11	$0.11	$0.11	$0.31	$0.26	$0.31
2007	$0.70	$2.73	$2.70	$0.88	$1.45	$0.95	$0.50	$0.46	$0.48	$0.11	$0.11	$0.11	$0.25	$0.25	$0.25
2008	$0.65	$3.67	$3.57	$1.39	$1.64	$1.42	$0.50	$0.84	$0.66	$0.23	$0.23	$0.23	$0.55	$0.25	$0.55
2009	$1.00	$3.50	$3.45	$1.20	$1.49	$1.33	$0.52	$0.80	$0.80	$0.22	$0.18	$0.22	$0.54	$0.25	$0.53
2010	$0.50	$3.76	$3.57	$1.46	$1.88	$1.74	$1.08	$1.27	$1.12	$0.33	$0.25	$0.33	$0.79	$0.47	$0.79
2011	$1.93	$4.19	$3.85	$1.56	$1.56	$1.56	$0.52	$0.79	$0.70	$0.41	$0.30	$0.37	$0.83	$0.61	$0.81
10-year Average	$0.70	$2.59	$2.46	$1.04	$1.36	$1.12	$0.47	$0.64	$0.56	$0.17	$0.14	$0.16	$0.40	$0.29	$0.40
2012	$2.08	$4.53	$4.09	$1.59	$1.80	$1.63	$0.75	$1.06	$0.80	$0.39	$0.25	$0.38	$0.70	$0.37	$0.70

Note: These prices are based on weighted average prices from ADF&G fish ticket database and do not reflect postseason adjustments and bonuses. Caution should be used when estimating value from these prices.

Table 5.–Estimated exvessel value of total commercial salmon harvest by gear type with previous 10-yr average, Lower Cook Inlet, 2002–2012.

Purse Seine Species	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Previous 10-yr Average	2012
Chinook	89	475	628	889	344	305	228	34	15	648	365	483
Sockeye	466,961	1,337,270	334,326	488,641	605,442	1,080,994	1,924,898	347,202	58,349	1,485,538	812,962	461,300
Coho	1,763	4,009	17,659	1,842	96,927	5,112	2,183	41	4,131	157	13,382	706
Pink	218,142	55,511	10,360	43,183	473,506	57,072	408,666	665,639	328,849	423,068	268,400	300,992
Chum	51,172	33,533	336,883	183,716	180,231	443	784,343	314,421	619,305	166,691	267,074	323,923
	$738,12	$1,430,79	$699,85	$718,27	$1,356,45	$1,143,92	$3,120,31	$1,327,33	$1,010,64	$2,076,10	$1,362,18	$1,087,40
Set Gillnet Species												
Chinook	24,104	14,758	31,371	12,921	19,100	19,991	14,408	5,412	1,792	8,032	15,189	4,847
Sockeye	186,825	365,974	108,035	115,746	134,339	251,705	253,544	332,005	151,183	218,700	211,805	109,526
Coho	4,328	1,711	4,391	6,864	16,475	4,724	3,406	4,953	1,458	488	4,880	200
Pink	800	498	192	133	5,337	0	1,650	1,073	2,728	2,606	1,502	10,074
Chum	7,146	6,776	1,898	2,287	4,350	2,508	2,678	4,216	4,972	7,975	4,480	2,528
	$223,20	$389,717	$145,88	$137,95	$179,600	$278,928	$275,685	$347,659	$162,132	$237,801	$237,856	$127,176
Hatchery Sales Species												
Chinook	0	0	0	0	0	0	0	0	0	0	0	0
Sockeye	214,114	354,602	110,464	291,395	419,805	222,175	528,507	1,177,187	430,230	1,625,199	537,368	1,021,125
Coho	401	334	0	2	0	96	4	2	222	0	106	44
Pink	179,855	81,767	427,339	585,235	97,059	44,580	3,867	1,249	280	487	142,172	1,074
Chum	43	74	0	3	282	142	1,009	0	33	16	160	1,034
	$394,41	$436,777	$537,80	$876,63	$517,146	$266,993	$533,387	$1,178,43	$430,765	$1,625,70	$679,806	$1,023,27
Average												
Purse Seine	$29,525	$52,992	$29,161	$24,768	$56,519	$60,207	$124,813	$102,103	$72,189	$90,265	$64,254	$67,963
Set Gillnet	$9,300	$16,238	$7,678	$8,115	$8,164	$17,433	$15,316	$18,298	$7,721	$11,324	$11,959	$8,478
Number of permits fished												
Purse Seine	25	27	24	29	24	19	25	13	14	23	22	16
Set Gillnet	24	24	19	17	22	16	18	19	21	21	20	15

Table 6.–Preseason harvest or total run projections for the 2012 commercial common property salmon fishery by district and species, Lower Cook Inlet Area.

District/facility	Forecast type	Chinook	Sockeye	Coho	Pink	Chum
Southern District	commercial harvest	191	1,900	1,500	62,000	1,770
Outer District	commercial harvest	2	16,700	30	256,000	36,800
Eastern District	commercial harvest	0	25,700	0	0	70
Kamishak Bay District	commercial harvest	2	98,300	100	0	36,900
Total Wild Stock		195	142,600	1,630	318,000	75,540
Tutka Lagoon Hatchery	total return	0	28,000	0	0	0
Port Graham Hatchery	total return	0	2,000	0	0	0
Kirschner Lake	total return	0	10,200	0	0	0
Leisure Lake	total return	0		0	0	0
Hazel Lake	total return	0	6,500	0	0	0
Resurrection Bay	total return	0	216,000	0	0	0
English Bay Lakes	total return	0	NA	0	0	0
Total Hatchery			262,700	0	0	0
Total Hatchery and Wild		195	405,300	1,630	318,000	75,540

Table 7.–Escapements relative to escapement goals and methods used to monitor escapements in 2012 for Chinook, chum, pink and sockeye salmon stocks in Cook Inlet, Alaska.

	2012	Goal	Escapement goal range			Monitoring Method				
Escapement		type	Lower	Mid	Upper	Aerial	Ground	Video	Weir	Sonar
Chinook Salmon										
Anchor River	4,509	SEG	≥ 5,000						X	X
Deep Creek	447	SEG	350	575	800	X				
Ninilchik River	505	SEG	550	925	1,300				X	
Chum Salmon										
Port Graham River	669	SEG	1,450	3,125	4,800		X			
Dogfish Lagoon	8,842	SEG	3,350	6,250	9,150		X			
Rocky River	3,165	SEG	1,200	3,300	5,400	X	X			
Port Dick Creek	8,400	SEG	1,900	3,175	4,450	X	X			
Island Creek	14,863	SEG	6,400	11,000	15,600	X	X			
Big Kamishak River	12,400	SEG	9,350	16,675	24,000	X				
Little Kamishak. River	30,250	SEG	6,550	15,175	23,800	X				
McNeil River	10,388	SEG	24,000	36,000	48,000	X				
Bruin River	16,074	SEG	6,000	8,125	10,250	X				
Ursus Cove	2,840	SEG	6,050	7,950	9,850	X				
Cottonwood Creek	4,111	SEG	5,750	8,875	12,000	X				
Iniskin Bay	3,049	SEG	7,850	10,775	13,700	X				
Pink Salmon										
Humpy Creek	67,934	SEG	21,650	53,600	85,550		X			
China Poot Creek	8,392	SEG	2,900	5,550	8,200		X			
Tutka Creek	10,436	SEG	6,500	11,750	17,000		X			
Barabara Creek	1,412	SEG	1,900	5,425	8,950		X			
Seldovia Creek	44,722	SEG	19,050	29,000	38,950		X			
Port Graham River	34,486	SEG	7,700	13,775	19,850		X			
Port Chatham	5,430	SEG	7,800	14,400	21,000		X			
Windy Creek Right	5,823	SEG	3,350	7,150	10,950		X			
Windy Creek Left	11,691	SEG	3,650	16,800	29,950		X			
Rocky River	15,684	SEG	9,350	31,800	54,250		X			
Port Dick Creek	18,057	SEG	18,550	38,425	58,300	X	X			
Island Creek	20,079	SEG	7,200	17,750	28,300	X	X			
S. Nuka Is. Creek	1,250	SEG	2,700	8,475	14,250	X	X			
Desire Lake	2,260	SEG	1,900	11,050	20,200	X				
Bruin River	31,800	SEG	18,650	87,200	155,750	X				
Sunday Creek	1,348	SEG	4,850	16,850	28,850	X				
Brown's Peak Creek	2,800	SEG	2,450	10,625	18,800	X				
Sockeye Salmon										
English Bay	3,985	SEG	6,000	9,750	13,500	X			X	
Delight Lake	8,763	SEG	7,500	12,575	17,650	X		X	X	
Desire Lake	8,840	SEG	8,800	12,000	15,200	X				
Bear Lake	7,865	SEG	700	4,500	8,300				X	
Aialik Lake	2,140	SEG	3,700	5,850	8,000	X				
Mikfik Lake	3,141	SEG	6,300	9,225	12,150	X		X		
Chenik Lake	16,505	SEG	3,500	8,750	14,000	X		X		
Amakdedori Creek	770	SEG	1,250	1,925	2,600	X				

Table 8.–Emergency orders issued for the commercial, personal use, and subsistence salmon fisheries in Lower Cook Inlet, 2012.

E.O. number/ Issue date	Description
2-F-H-01-12/ Friday, May 18	**LCI closed waters.** Assigned latitude and longitude coordinates to closed waters areas as defined by physical markers and also by department generated maps. In addition, there are additional areas referenced that either lack GPS coordinates, have incorrect coordinates printed in the regbook, or have misspelled locations. Amendments are to 5 AAC 21.350 CLOSED WATERS.
2-F-H-02-12/ Friday, May 18	**Bear Lake SHA.** Defines the waters of the Bear Lake Special Harvest Area and opens this area to contractees of Cook Inlet Aquaculture Association for the cost recovery harvest of returning hatchery produced sockeye salmon for weekly 6:00 AM Monday through 10:00 PM Friday fishing periods beginning on Monday, May 21.
2-F-H-03-12/ Wednesday, May 30	**Kamishak District, purse seine.** Establishes a seven days per week fishing schedule in waters of that district excluding the McNeil and Paint River subdistricts beginning Friday, June 1.
2-F-H-04-12/ Wednesday, May 30	**Southern District, set gillnet.** Opens waters of the Southern District to commercial salmon harvest and establishes two weekly 48-hour set gillnet fishing periods in the Southern District excluding the Pt. Graham Subdistrict beginning at 6:00 AM on Mondays and Thursdays effective Monday, June 4. Additionally opens above waters for a 24-hour period effective at 6:00 AM, Friday, June 1.
2-F-H-05-12/ Friday, June 15	**Chenik Subdistrict, purse seine.** Closes the Chenik Subdistrict to commercial salmon harvest until further notice effective 6:00 AM, Monday, June 18.
2-F-H-06-12/ Tuesday, June 19	**Subsistence harvest.** Closed waters of the Pt. Graham Subdistrict to all subsistence salmon harvest effective 10:00 PM on Friday, June 22.
2-F-H-07-12/ Friday, June 22	**Southern District, purse seine.** Establishes two weekly 64-hour purse seine fishing periods in portions of the China Poot and Halibut Cove subdistricts beginning at 6:00 AM on Mondays and Thursdays effective 6:00 AM, Monday, June 25.
2-F-H-08-12/ Friday, June 29	**Kirschner SHA, China Poot SHA, Tutka Lagoon SHA.** Closes Bruin Bay Subdistrict to common property salmon harvest and opens the Tutka Lagoon, China Poot, and Kirschner SHAs to hatchery cost recovery harvest effective July 2.
2-F-H-09-12/ Tuesday, July 3	**Chenik Subdistrict, purse seine.** Opens waters of the Chenik Subdistrict including Chenik Lagoon to purse seine harvest for a 16-hour period on July 5. In addition, opens waters of the Chenik Subdistrict excluding the lagoon on July 6, and 7 beginning at 6:00 AM on each of those days.
2-F-H-10-12/ Thursday, July 5	**Chenik Subdistrict, purse seine.** Opens waters of the Chenik Subdistrict including Chenik Lagoon to purse seine harvest on July 6, and 7 for two 16-hour fishing periods beginning at 6:00 AM on each of those days.
2-F-H-11-12/ Thursday, July 5	**Port Graham Hatchery SHA, subsistence harvest.** Opens portions of the Port Graham Hatchery SHA to subsistence salmon harvest beginning at 6:00 AM on July 6 until 10:00 PM on Sunday, July 8.

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Table 8.–Page 2 of 3.

E.O. number/ Issue date	Description
2-F-H-12-12/ Friday, July 6	**Port Graham Hatchery SHA, subsistence harvest.** Opens portions of the Port Graham Hatchery SHA to weekly subsistence salmon harvest fishing periods from 6:00 AM on Monday, until 10:00 PM Sunday beginning on Monday, July 9.
2-F-H-13-12/ Friday, July 6	**Chenik Subdistrict, purse seine.** Extends the current opening in the Chenik Subdistrict until 10:00 PM on Sunday, July 8.
2-F-H-14-12/ Friday, July 13	**English Bay Section,(Port Graham Subdistrict), subsistence harvest.** Opens waters of the English Bay Section of the Pt. Graham Subdistrict to regular 6:00 AM Monday through 10:00 PM Sunday subsistence fishing periods effective on July 16.
2-F-H-15-12/ Friday, July 13	**Kamishak District, purse seine.** Opens waters in the southern portion of the Bruin Bay subdistrict to weekly fishing periods concurrent with other areas in the Kamishak District effective 6:00 AM on Sunday, July 16.
2-F-H-16-12/ Wednesday, July 25	**Outer District, purse seine.** Opens waters of the Outer District to commercial salmon harvest for the 2012 season. Opens portions of the East Nuka Subdistrict to daily 14-hour fishing periods beginning at 8:00 AM from Thursday, July 26 through Saturday, July 28.
2-F-H-17-12/ Friday, July 27	**Outer and Kamishak districts, purse seine.** Opens portions of Dogfish Bay, Rocky Bay, Windy Bay and Port Dick to purse seine harvest for two 16 hour periods on July 30 and 31 (Monday and Tuesday) beginning at 6:00 AM each day. Additionally, opens waters in the Northern portion of Bruin Bay as well as the Chenik Subdistrict to common property purse seine harvest concurrent with ongoing periods in the district effective at 6:00 AM on Monday, July 30.
2-F-H-18-12/ Wednesday, August 1	**Outer and Southern districts, purse seine.** Opens portions of Dogfish Bay, Rocky Bay, Windy Bay and Port Dick to purse seine harvest for two 16 hour periods on August 2 and 3rd (Thursday and Friday) beginning at 6:00 AM each day. In addition opens portions of Seldovia and Port Graham subdistricts to commercial purse seine harvest on this schedule.
2-F-H-19-12/ Friday, August 3	**Outer and Southern districts, purse seine.** Establishes 16-hour fishing periods on Monday, Wednesday and Friday beginning at 6:00 AM on those days in portions of the Port Graham, Seldovia and Humpy Creek subdistricts in the Southern District as well as portions of the Dogfish Bar, Rocky Bay, Windy Bay and Port Dick subdistricts.
2-F-H-20-12/ Tuesday, August 7.	**Southern and Outer districts, purse seine.** Opens portions of regulatory closed waters in the Port Graham and Seldovia Subdistrict to commercial common property harvest. Closes the Port Dick South and North sections to commercial harvest.
2-F-H-21-12/ Friday, August 10	**Southern and Kamishak districts. Purse seine and set gillnet.** Suspends anadromous stream closures at the terminus of Bruin Bay effective immediately. Opens waters of the Port Graham Subdistrict to commercial set gillnet harvest on a schedule concurrent with ongoing openings for this gear elsewhere in the Southern District effective at 6:00 AM on Monday, August 13.

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Table 8.–Page 3 of 3.

E.O. number/ Issue date	Description
2-F-H-22-12/ Wednesday, August 15	**Kamishak District, purse seine.** Opens waters of the Kirschner Lake SHA to common property seine harvest effective at 6:00 AM on Thursday, August 16.
2-F-H-23-12/ Wednesday, August 22	**Outer District, purse seine.** Closes all waters of the Port Dick Subdistrict to commercial salmon harvest effective 6:00 AM on Friday, August 24.
2-F-H-24-12/ Monday, August 27	**Southern District, personal use set gillnet.** Closes waters of the Southern District to personal use salmon harvest effective 6:00 AM on Wednesday, August 29.
2-F-H-25-12/ Friday, August 31	**LCI Area, purse seine.** Rescinds Emergency Order No. 2-F-H-021 that removed anadromous waters closures in portions of Bruin Bay. In addition all waters of the Lower Cook Inlet management area will close to commercial purse seine salmon harvest at 12:01 AM on Sunday, September 16.

APPENDIX A: SOUTHERN DISTRICT

Appendix A1.–Southern District commercial set gillnet salmon harvest by period, 2012.

			Permits		Chinook		Sockeye		Coho		Pink		Chum	
Period [a]	Date	Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1 [a]	06/01-06/02	24	5	5	4	64	429	2,451	0	0	0	0	15	107
2 [a]	06/04-06/06	48	7	8	10	94	519	3,089	0	0	0	0	6	55
3 [a]	06/07-06/09	48	6	7	16	159	565	3,265	0	0	0	0	33	236
4 [a]	06/11-06/13	48	7	8	7	74	451	2,686	0	0	0	0	75	535
5 [a]	06/14-06/16	48	6	6	3	42	215	1,324	0	0	0	0	18	129
6 [a]	06/18-06/20	48	8	11	15	157	666	4,082	0	0	93	386	37	283
7 [a]	06/21-06/23	48	5	5	1	12	401	2,463	0	0	48	200	46	345
8 [a]	06/25-06/27	48	8	8	5	51	461	2,801	0	0	178	750	38	281
9 [a]	06/28-06/30	48	8	9	1	41	522	3,295	0	0	120	500	42	324
10 [a]	07/02-07/04	48	8	8	8	103	525	3,262	0	0	1	3	119	872
11 [a]	07/05-07/07	48	6	9	2	60	562	3,244	0	0	158	628	11	85
12 [a]	07/09-07/11	48	8	13	3	90	1,024	6,149	1	5	328	1,117	87	618
13 [a]	07/12-07/14	48	8	10	3	24	763	4,617	4	22	1,456	5,749	69	538
14 [a]	07/16-07/18	48	7	18	0	0	987	5,841	7	32	2,805	11,161	105	803
15 [a]	07/19-07/21	48	8	17	2	21	902	5,088	0	0	2,359	9,459	146	1,064
16 [a]	07/23-07/25	48	8	14	1	27	435	2,402	0	0	1,070	4,116	26	193
17 [a]	07/26-07/28	48	6	14	0	0	464	2,764	7	36	1,222	4,663	41	276
18 [a]	07/30-08/01	48	3	4	3	40	162	850	1	7	260	760	7	56
19 [a]	08/02-08/04	48	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
20 [a]	08/06-08/08	48	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
21 [a]	08/09-08/11	48	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
22 [a,c] [d]	08/13-08/15	48	0	0	0	0	0	0	0	0	0	0	0	0
35 [a,c]	09/27-09/29	48	0	0	0	0	0	0	0	0	0	0	0	0
Total			15	181	86	1,070	10,260	60,848	33	189	10,305	40,296	928	6,840
Average weight						12.44		5.93		5.72		3.91		7.37

[a] Set gillnet sections located in Halibut Cove, Tutka Bay, Barabara Creek and Seldovia Bay Subdistricts open to commercial harvest in 48 hour periods.

[b] Confidential data. Fewer than 3 permits reporting.

[c] Set gillnet section in Port Graham Subdistrict open to commercial harvest for one 12 hour period.

[d] No deliveries during 48-hour periods 22–35 that occurred from August 13 through September 29.

Appendix A2.–Southern District commercial purse seine salmon harvest by period, 2012.

			Permits		Chinook		Sockeye		Coho		Pink		Chum	
Period [a,b]	Date	Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1 [a,b]	06/25-06/27	64	0	0	0	0	0	0	0	0	0	0	0	0
2 [a,b]	06/28-06/30	64	0	0	0	0	0	0	0	0	0	0	0	0
3 [a,b]	07/02-07/04	64	0	0	0	0	0	0	0	0	0	0	0	0
4 [a,b]	07/05-07/07	64	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
5 [a,b]	07/09-07/11	64	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
6 [a,b]	07/12-07/14	64	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
7 [a,b]	07/16-07/18	64	3	7	21	54	1,409	6,896	0	0	440	1,443	1	14
8 [a,b]	07/19-07/21	64	4	7	2	9	1,864	8,361	10	45	287	1,036	29	68
9 [a,b]	07/23-07/25	64	6	10	3	9	1,779	9,686	2	11	756	2,490	11	76
10 [a,b]	07/26-07/28	64	3	5	2	4	894	3,696	2	9	1,152	2,838	2	16
11 [a,b]	07/30-08/01	64	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
12 [a,b,d,e]	08/02-08/04	64	0	0	0	0	0	0	0	0	0	0	0	0
13 [a,b,d,e,f]	08/06-08/06	16	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
14 [a,b,f,g]	08/08-08/08	16	5	6	0	0	0	0	0	0	64,893	194,340	104	794
15 [a,b,f,g]	08/10-08/10	16	6	8	0	0	0	0	0	0	48,313	146,450	5	39
16 [a,b,f,g]	08/13-08/13	16	6	11	0	0	7	42	0	0	30,235	93,178	17	124
17 [a,b,f,g]	08/15-08/15	16	8	13	0	0	3	18	4	14	18,830	61,154	48	370
18 [a,b,f,g]	08/17-08/17	16	5	5	0	0	3	15	0	0	3,299	11,237	0	0
19 [a,b,f,g]	08/20-08/20	16	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
20 [a,b,f,g]	08/22-08/22	16	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]	[c]
21 [a,b,f,g] [h]	08/24-08/24	16	0	0	0	0	0	0	0	0	0	0	0	0
30 [a,b,f,g]	09/14-09/14	16	0	0	0	0	0	0	0	0	0	0	0	0

Note: Unless otherwise noted, regular closed waters were in effect.

[a] Waters of Halibut Cove Subdistrict, excluding waters of Halibut Cove Lagoon, open to commercial salmon seine harvest for regular 64 hour periods.

[b] Waters of China Poot Subdistrict excluding the SHA open to commercial salmon seine harvest for regular 64 hour periods.

[c] Confidential data. Fewer than 3 permits reporting.

[d] Select waters of the Port Graham Subdistrict east of 151° 48.50 W long. Open to commercial salmon seine harvest for 16 hour periods.

[e] Waters of Seldovia Bay Subdistrict open to commercial salmon seine harvest for 16 hour periods.

[f] Waters of Humpy Creek Subdistrict south of 59° 40.74 N lat. open to commercial salmon seine harvest for 16 hour periods.

[g] Open waters of Seldovia Bay and Port Graham subdistricts expanded to allow fishing closer to fresh water during same 16 hour periods.

[h] No deliveries during 16-hour periods 21–30 that occurred from August 24 through September 14.

Appendix A3.–Total commercial common property salmon harvest in the Southern District, 1959–2012.

Year	Permits	Chinook	Sockeye	Coho	Pink	Chum
			Set gillnet			
1959		49	6,148	377	4,342	361
1960		6	7,007	398	3,894	347
1961		15	8,631	216	8,201	425
1962		13	11,793	1,281	12,207	1,558
1963		9	8,305	314	1,490	812
1964		5	16,632	1,576	25,935	1,972
1965		9	10,998	314	7,267	679
1966		31	10,317	505	24,981	1,790
1967		112	22,097	504	13,962	1,929
1968		31	15,741	1,431	12,614	1,289
1969		33	11,570	246	10,717	1,298
1970		26	11,455	1,154	18,512	1,575
1971		41	18,398	1,449	8,564	1,352
1972		69	31,340	323	6,303	2,819
1973		134	23,970	1,089	20,222	2,374
1974		175	26,996	3,010	11,097	2,713
1975		96	26,588	2,337	49,490	4,020
1976		176	33,993	1,321	13,412	1,353
1977		175	54,404	869	38,064	2,765
1978		1,052	86,934	3,053	11,556	4,117
1979		483	34,367	7,595	69,368	5,266
1980		225	29,922	8,038	26,613	2,576
1981		222	53,665	6,735	68,794	8,524
1982		894	42,389	5,557	15,838	7,113
1983		822	41,707	1,799	20,553	4,377
1984		643	45,806	2,979	20,764	5,412
1985	34	924	23,163	3,908	22,898	4,217
1986	34	745	21,807	2,827	14,244	2,426
1987	29	653	28,209	2,025	9,224	2,419
1988	27	1,145	14,758	2,819	29,268	4,423
1989	23	1,281	13,970	4,792	16,210	1,877
1990	20	1,361	15,863	1,046	12,646	1,938
1991	20	842	20,525	5,011	3,954	1,577
1992	20	1,288	17,002	848	15,958	1,687
1993	17	1,089	14,791	3,088	12,008	2,591
1994	16	1,103	14,004	1,073	23,621	2,419
1995	23	2,078	19,406	3,564	41,654	3,958
1996	24	1,054	69,338	5,779	14,813	2,792
1997	25	1,135	59,401	4,475	64,162	4,166
1998	24	952	26,131	1,057	24,403	3,754
1999	20	1,491	27,646	1,374	5,348	4,335
2000	24	1,019	26,503	621	21,845	5,214
2001	18	865	28,503	1,811	13,393	3,487
2002	24	1,513	46,812	2,393	6,741	4,681
2003	24	878	81,722	2,291	7,325	4,998
2004	19	1,400	16,087	1,164	834	1,234
2005	17	525	15,669	1,905	341	1,326
2006	22	580	14,219	2,426	12,288	2,019
2007	16	439	28,870	1,616	0	1,437
2008	18	148	26,819	599	1,884	1,394
2009	19	83	38,220	968	2,136	2,274
2010	21	29	14,765	171	3,106	1,503
2011	21	100	22,782	103	2,643	1,946
Previous 10-yr avg.	20	570	30,579	1,364	3,730	2,281
2012	15	86	10,260	33	10,305	928

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Year	Permits	Chinook	Sockeye	Coho	Pink	Chum
			Purse seine			
1959		22	1,572	332	45,902	13,606
1960		6	5,232	839	206,095	3,753
1961		24	1,473	933	183,666	2,491
1962		45	4,776	814	551,843	7,520
1963		79	4,837	3,706	98,330	6,711
1964		79	651	7,329	240,477	9,557
1965		1	187	419	82,993	1,779
1966		29	1,875	4,302	152,563	26,964
1967		61	4,252	1,875	78,831	21,487
1968		30	2,975	3,240	141,419	3,114
1969		26	1,008	239	60,036	1,302
1970		64	665	2,390	189,554	6,298
1971		0	5	1,702	41,502	1,505
1972		0	5	960	2,823	2,117
1973		5	102	152	77,352	1,214
1974		7	33	44	37,778	12
1975		46	805	702	844,125	1,408
1976		266	1,287	584	86,405	164
1977		7	259	386	118,961	3,969
1978		459	54,154	1,265	240,205	1,408
1979		716	2,975	3,251	917,541	2,955
1980		189	13,007	3,530	451,406	2,029
1981		802	24,215	1,241	1,385,188	12,396
1982		32	1,044	1,608	280,718	11,353
1983		36	91,964	1,634	669,701	9,904
1984		18	117,438	436	316,021	4,186
1985	37	49	60,890	350	496,000	1,292
1986	43	31	15,031	268	528,277	3,134
1987	38	505	61,453	138	81,298	2,611
1988	49	510	90,544	168	823,114	3,319
1989	57	608	84,082	1,875	971,278	1,264
1990	56	185	66,549	506	148,198	495
1991	50	556	142,560	4,388	148,143	357
1992	53	564	82,455	429	125,106	193
1993	42	1,073	131,367	1,341	271,303	197
1994	25	126	47,494	299	612,724	211
1995	39	211	132,892	1,593	1,220,316	572
1996	29	126	269,553	3,795	10,293	719
1997	19	126	121,184	1,122	160,595	92
1998	35	118	143,350	1,186	498,090	201
1999	37	269	198,862	1,388	242,003	289
2000	29	165	78,072	147	4,515	125
2001	19	121	99,866	895	107,967	293
2002	19	40	121,054	1,376	5,342	122
2003	21	301	391,768	3,117	47,913	732
2004	19	256	21,621	267	2,273	138
2005	23	85	65,333	816	32,201	422
2006	16	47	52,020	610	3,446	163
2007	13	27	61,193	1,710	10,394	127
2008	13	40	62,675	720	4,941	66
2009[a]	0	0	0	0	0	0
2010[a]	0	0	0	0	0	0
2011	5	26	9,945	24	512	16
Previous 10-yr avg.	13	82	78,561	864	10,702	179
2012	11	39	6,396	44	175,770	439

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Year	Permits	Chinook	Sockeye	Coho	Pink	Chum
			Purse seine and set gillnet combined			
1959		71	7,720	709	50,244	13,967
1960		12	12,239	1,237	209,989	4,100
1961		39	10,104	1,149	191,867	2,916
1962		58	16,569	2,095	564,050	9,078
1963		88	13,142	4,020	99,820	7,523
1964		84	17,283	8,905	266,412	11,529
1965		10	11,185	733	90,260	2,458
1966		60	12,192	4,807	177,544	28,754
1967		173	26,349	2,379	92,793	23,416
1968		61	18,716	4,671	154,033	4,403
1969		59	12,578	485	70,753	2,600
1970		90	12,120	3,544	208,066	7,873
1971		41	18,403	3,151	50,066	2,857
1972		69	31,345	1,283	9,126	4,936
1973		139	24,072	1,241	97,574	3,588
1974		182	27,029	3,054	48,875	2,725
1975		142	27,393	3,039	893,615	5,428
1976		442	35,280	1,905	99,817	1,517
1977		182	54,663	1,255	157,025	6,734
1978		1,511	141,088	4,318	251,761	5,525
1979		1,199	37,342	10,846	986,909	8,221
1980		414	42,929	11,568	478,019	4,605
1981		1,024	77,880	7,976	1,453,982	20,920
1982		926	43,433	7,165	296,556	18,466
1983		858	133,671	3,433	690,254	14,281
1984		661	163,244	3,415	336,785	9,598
1985		973	84,053	4,258	518,898	5,509
1986		776	36,838	3,095	542,521	5,560
1987		1,158	89,662	2,163	90,522	5,030
1988		1,655	105,302	2,987	852,382	7,742
1989		1,889	98,052	6,667	987,488	3,141
1990		1,546	82,412	1,552	160,844	2,433
1991		1,398	163,085	9,399	152,097	1,934
1992		1,852	99,457	1,277	141,064	1,880
1993		2,162	146,158	4,429	283,311	2,788
1994		1,229	61,498	1,372	636,345	2,630
1995		2,289	152,298	5,157	1,261,970	4,530
1996		1,180	338,891	9,574	25,106	3,511
1997		1,261	180,585	5,597	224,757	4,258
1998		1,070	169,481	2,243	522,493	3,955
1999		1,760	226,508	2,762	247,351	4,624
2000		1,184	104,575	768	26,360	5,339
2001		986	128,369	2,706	121,360	3,780
2002		1,553	167,866	3,769	12,083	4,803
2003		1,179	473,490	5,408	55,238	5,730
2004		1,656	37,708	1,431	3,107	1,372
2005		610	81,002	2,721	32,542	1,748
2006		627	66,239	3,036	15,734	2,182
2007		466	90,063	3,326	10,394	1,564
2008		188	89,494	1,319	6,825	1,460
2009 [a]		83	38,220	968	2,136	2,274
2010 [a]		29	14,765	171	3,106	1,503
2011		126	32,727	127	3,155	1,962
Prev 10-yr avg.		652	109,157	2,228	14,432	2,460
2012		125	16,656	77	186,075	1,367

Source: ADF&G fish ticket database.

[a] No commercial common property purse seine fishing periods occurred in 2009 or 2010.

Appendix A4.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement through the English Bay weir, 2012.

	Actual		Apportioned SEG				
			Projected minimum		Projected maximum		
Date	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Comments
01 Jun	0	0	1	1	3	3	Weir fish tight.
02 Jun	0	0	3	5	8	11	
03 Jun	0	0	1	6	2	13	
04 Jun	0	0	35	41	78	91	
05 Jun	10	10	23	63	52	143	
06 Jun	30	40	62	125	139	281	
07 Jun	1	41	109	234	246	528	
08 Jun	35	76	184	418	413	941	
09 Jun	0	76	45	463	101	1,042	
10 Jun	4	80	251	714	564	1,606	
11 Jun	30	110	240	954	540	2,146	
12 Jun	10	120	83	1,037	187	2,333	
13 Jun	5	125	53	1,090	120	2,453	
14 Jun	37	162	64	1,154	143	2,596	
15 Jun	3	165	77	1,231	174	2,770	
16 Jun	14	179	65	1,296	146	2,916	
17 Jun	12	191	65	1,361	145	3,062	
18 Jun	0	191	94	1,455	212	3,273	
19 Jun	0	191	95	1,550	215	3,488	
20 Jun	64	255	204	1,755	460	3,948	
21 Jun	37	292	135	1,890	304	4,251	
22 Jun	38	330	159	2,049	358	4,610	
23 Jun	236	566	181	2,229	406	5,016	
24 Jun	402	968	181	2,410	407	5,423	
25 Jun	35	1,003	265	2,676	597	6,020	
26 Jun	288	1,291	209	2,885	471	6,491	
27 Jun	24	1,315	248	3,133	559	7,050	
28 Jun	214	1,529	347	3,480	781	7,831	
29 Jun	193	1,722	297	3,778	669	8,500	
30 Jun	141	1,863	222	3,999	499	8,998	
01 Jul	46	1,909	220	4,219	495	9,493	
02 Jul	73	1,982	195	4,414	439	9,932	
03 Jul	91	2,073	178	4,592	400	10,332	
04 Jul	47	2,120	119	4,711	268	10,600	
05 Jul	183	2,303	148	4,859	332	10,933	
06 Jul	55	2,358	121	4,980	272	11,204	
07 Jul	69	2,427	164	5,144	369	11,573	
08 Jul	210	2,637	96	5,240	217	11,790	
09 Jul	0	2,637	96	5,336	215	12,005	
10 Jul	149	2,786	67	5,402	150	12,155	
11 Jul	250	3,036	115	5,518	260	12,415	
12 Jul	0	3,036	120	5,638	270	12,685	
13 Jul	58	3,094	60	5,698	135	12,820	
14 Jul	137	3,231	64	5,762	144	12,964	
15 Jul	5	3,236	40	5,802	90	13,054	
16 Jul	90	3,326	69	5,871	156	13,210	
17 Jul	54	3,380	44	5,915	99	13,308	
18 Jul	67	3,447	12	5,927	28	13,336	

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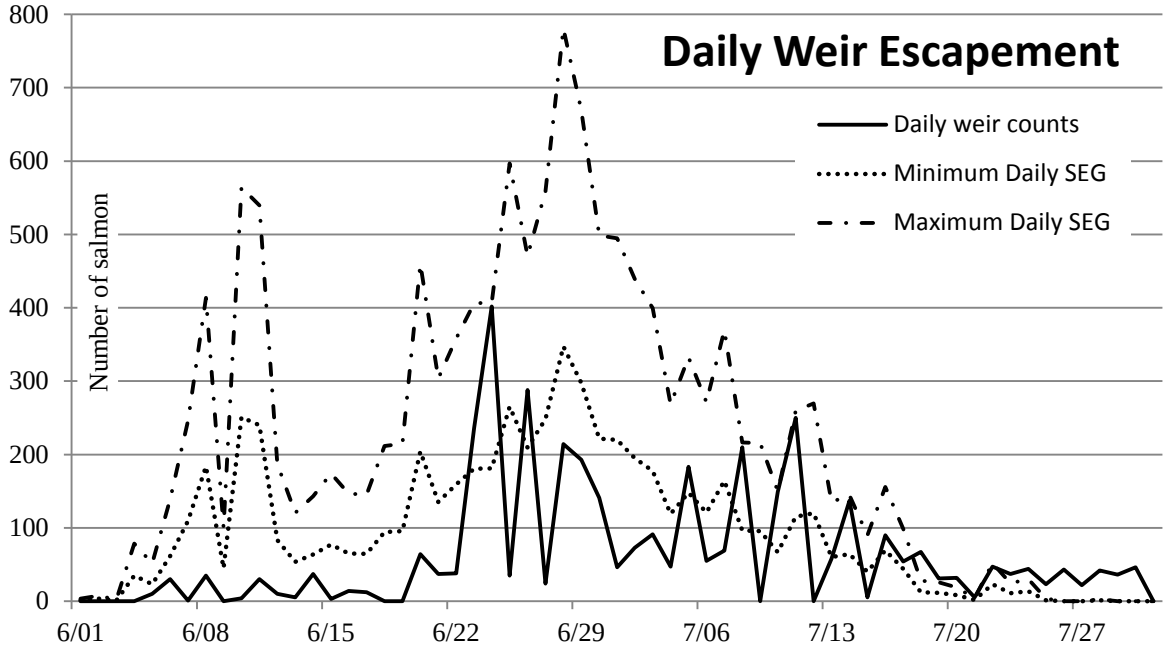
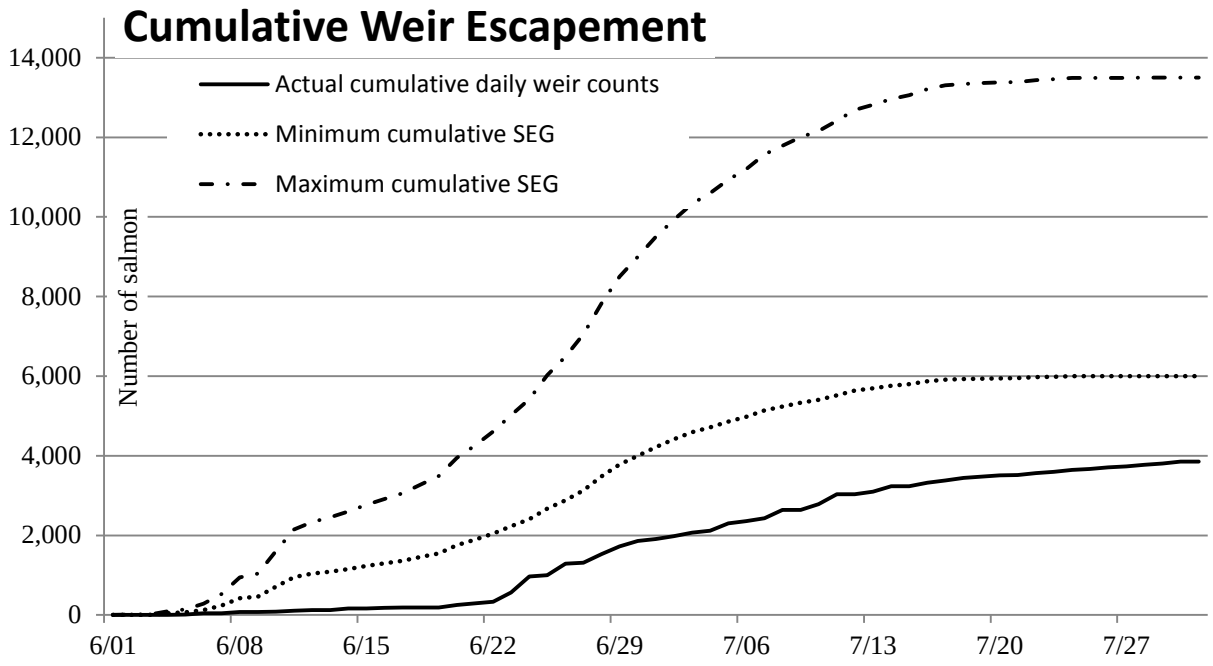
	Actual		Apportioned SEG plus CIAA brood goal				
			Projected minimum		Projected maximum		
Date	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Comments
19 Jul	31	3,478	12	5,939	26	13,362	
20 Jul	32	3,510	8	5,947	19	13,381	
21 Jul	5	3,515	2	5,949	4	13,385	
22 Jul	47	3,562	23	5,972	52	13,437	
23 Jul	37	3,599	11	5,983	25	13,461	
24 Jul	44	3,643	13	5,996	30	13,492	
25 Jul	23	3,666	1	5,998	3	13,495	
26 Jul	43	3,709	0	5,998	0	13,495	
27 Jul	22	3,731	0	5,998	0	13,495	
28 Jul	42	3,773	1	5,999	3	13,498	
29 Jul	36	3,809	0	5,999	0	13,498	
30 Jul	46	3,855	0	5,999	0	13,498	
31 Jul	0	3,855	0	5,999	0	13,498	Last report from weir crew.

Note: English Bay River sustainable escapement goal range is 6,000–13,500. Anticipated escapement derived using historical run timing.





Appendix A5.–Minimum and maximum anticipated cumulative and daily escapement of sockeye salmon versus actual escapement through the English Bay weir, 2012.

Appendix A6.–Sockeye salmon escapement past the English Bay weir, 1927–2012.

Year	Sustainable Escapement Goal	Total weir passage	Broodstock harvested	Spawning escapement
1927		19,197	0	19,197
1928		24,025	0	24,025
1929		15,407	0	15,407
1930		18,858	0	18,858
1931		18,878	0	18,878
1932		22,933	0	22,933
1933			0	
1934			0	
1935		15,851	0	15,851
1936		15,767	0	15,767
1937		14,857	0	14,857
1938		16,779	0	16,779
1939		48,777	0	48,777
1940		30,357	0	30,357
1941		26,905	0	26,905
		(No weir from 1942–1992.)		
1993	10,000–20,000	8,939	0	8,939
1994	10,000–20,000	13,800	0	13,800
1995	10,000–20,000	22,467	1,767	20,700
1996	10,000–20,000	12,335	1,230	11,105
1997	10,000–20,000	15,430	1,065	14,365
1998	10,000–20,000	15,432	1,296	14,136
1999	10,000–20,000	15,844	1,234	14,610
2000	10,000–20,000	12,613	1,376	11,237
2001	10,000–20,000	10,508	0	10,508
2002	6,000–13,500	16,550	1,573	14,977
2003	6,000–13,500	19,978	219	19,759
2004	6,000–13,500	16,435	1,390	15,045
2005	6,000–13,500	7,574	0	7,574
2006	6,000–13,500	16,533	0	16,533
2007	6,000–13,500	16,487	0	16,487
2008	6,000–13,500	11,993	0	11,993
2009	6,000–13,500	18,439	256	18,183
2010	6,000–13,500	12,253	0	12,253
2011	6,000–13,500	12,036	2,116	9,920
Previous 10-yr average		14,828	555	14,272
2012	6,000–13,500	3,855	411	3,444

Appendix A7.–Pink and chum salmon escapements, as measured by ground survey, using area under the curve estimation in the Southern District, 2012.

Location	Species	Survey number	Survey date (t_i)	Previous survey date	Days between surveys	Current live count, (c_i)	Previous live count	Previous + current live count	Fish days[b], (A_b)	Accum. fish days	Escape. Index[c]	Accum. Escape. Index[d]	Accum. Percent Escapment	Carcass Count	Live plus Carcass
Barabara	pink	t_{start}	8/24												
Creek		1	9/11	8/24	17.5	27	0	27	236	236	14	14	50%	1,385	1,412
		^{t}end	9/28		17.5				236	473	14	27	100%		
China	pink	t_{start}	7/26												
Poot		1	8/13	7/26	17.5	2,682	0	2,682	23,468	23,468	1,341	1,341	16%	0	2,682
Creek		2	8/29	8/13	16	6,086	2,682	8,768	70,144	93,612	4,008	5,349	64%	93	6,179
		^{t}end	9/15		17.5				53,253	146,864	3,043	8,392	100%		
English	pink	t_{start}	8/20												
Bay		1	9/7	8/20	17.5	0	0	0	0	0	0	0	0%	5,000	5,000
Lakes		^{t}end	9/24		17.5										
Humpy	pink	t_{start}	7/10												
Creek		1	7/10	7/10	0	0	0	0	0	0	0	0	0%		0
		2	7/24	7/10	14	6,028	0	6,028	42,196	42,196	2,411	2,411	4%	1	6,029
		3	8/2	7/24	9	19,220	6,028	25,248	113,616	155,812	6,492	8,904	13%	8	19,228
		4	8/9	8/2	7	40,412	19,220	59,632	208,712	364,524	11,926	20,830	31%	65	40,477
		5	9/12	8/9	34	5,333	40,412	45,745	777,665	1,142,189	44,438	65,268	96%	15,470	20,803
		^{t}end	9/29		17.5				46,664	1,188,853	2,667	67,934	100%		
Humpy	chum	t_{start}	6/22												
Creek		1	7/10	6/22	17.5	2	0	2	18	18	1	1	0%		4
		2	7/24	7/10	14	756	2	758	5,306	5,324	303	304	27%	0	756
		3	8/2	7/24	9	294	756	1,050	4,725	10,049	270	574	50%	3	297
		4	8/9	8/2	7	434	294	728	2,548	12,597	146	720	63%	124	558
		5	9/12	8/9	34	0	434	434	7,378	19,975	422	1,141	100%	6	6
		^{t}end	9/12		0				0	19,975	0	1,141	100%		

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Location	Species	Survey number	Survey date (t_i)	Previous survey date	Days between surveys	Current live count, (c_i)	Previous live count	Previous + current live count	Fish days[b], (A_b)	Accum. fish days	Escape. Index[c]	Accum. Escape. Index[d]	Accum. Percent Escapment	Carcass Count	Live plus Carcass
Port	pink	t_{start}	7/2												
Graham		1	7/20	7/2	17.5	2,348	0	2,348	20,545	20,545	1,174	1,174	3%		2,348
River		2	7/26	7/20	6	9,436	2,348	11,784	35,352	55,897	2,020	3,194	9%		9,436
		3	8/10	7/26	15	25,300	9,436	34,736	260,520	316,417	14,887	18,081	52%	2,008	27,308
		4	8/28	8/10	18	3,346	25,300	28,646	257,814	574,231	14,732	32,813	95%	4,349	7,695
		^{t}end	9/14		17.5				29,278	603,509	1,673	34,486	100%		
Port	chum	t_{start}	7/2												
Graham		1	7/20	7/2	17.5	332	0	332	2,905	2,905	166	166	24%		332
River		2	7/26	7/20	6	431	332	763	2,289	5,194	131	297	42%		431
		3	8/10	7/26	15	226	431	657	4,928	10,122	282	578	83%	146	372
		4	8/28	8/10	18	4	226	230	2,070	12,192	118	697	100%	39	43
		^{t}end	9/14		17.5				35	12,227	2	699	100%		
Seldovia	pink	t_{start}	7/5												
River		1	7/23	7/5	17.5	6,899	0	6,899	60,366	60,366	3,450	3,450	8%	2	6,901
		2	8/3	7/23	11	30,292	6,899	37,191	204,551	264,917	11,689	15,138	34%	411	30,703
		3	8/14	8/3	11	24,640	30,292	54,932	302,126	567,043	17,264	32,402	72%	10,713	35,353
		^{t}end	8/31		17.5				215,600	782,643	12,320	44,722	100%		
Seldovia	chum	t_{start}	7/5												
River		1	7/23	7/5	17.5	277	0	277	2,424	2,424	139	139	32%	0	277
		2	8/3	7/23	11	281	277	558	3,069	5,493	175	314	73%	74	355
		3	8/14	8/3	11	35	281	316	1,738	7,231	99	413	96%	174	209
		^{t}end	8/31		17.5				306	7,537	18	431	100%		
Tutka Bay-	pink	t_{start}	8/20												
head		1	9/7	8/20	17.5	1,700	0	1,700	14,875	14,875	850	850	50%	0	1,700
creek		^{t}end	9/24		17.5				14,875	29,750	850	1,700	100%		

-continued-

Location	Species	Survey number	Survey date (t_i)	Previous survey date	Days between surveys	Current live count, (c_i)	Previous live count	Previous + current live count	Fish days[b], (A_b)	Accum. fish days	Escape. Index[c]	Accum. Escape. Index[d]	Accum. Percent Escapment	Carcass Count	Live plus Carcass
Tutka	pink	t_{start}	6/25												
Bay		1	7/13	6/25	17.5	595	0	595	5,206	5,206	298	298	3%		595
Lagoon		2	7/25	7/13	12	4,744	595	5,339	32,034	37,240	1,831	2,128	20%	2	4,746
Creek		3	7/31	7/25	6	4,602	4,744	9,346	28,038	65,278	1,602	3,730	36%	58	4,660
		4	8/8	7/31	8	4,887	4,602	9,489	37,956	103,234	2,169	5,899	57%	883	5,770
		5	8/16	8/8	8	2,373	4,887	7,260	29,040	132,274	1,659	7,559	72%	1,815	4,188
		6	8/23	8/16	7	2,083	2,373	4,456	15,596	147,870	891	8,450	81%	1,641	3,724
		7	9/6	8/23	14	1,281	2,083	3,364	23,548	171,418	1,346	9,795	94%	486	1,767
		^{t}end	9/23		17.5				11,209	182,627	641	10,436	100%		

Source: Bue et al. 1998.

[a] Fish days (A_b) = (Days between surveys * (prev. count + current count)) ÷ 2.

[b] Escapement index = A_b / 17.5 day streamlife estimate.

[c] Area under the curve estimate equals the cumulative escapement index.

Appendix A8.–Unexpanded escapement indices and harvests by subdistricts in the Southern District, Lower Cook Inlet, 2012.

	Harvest[a]				Escapement index[b]				Combined harvest and escapement index counts			
Location	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum
North Shore Subdistrict (241-13)	23	1,309	182	3					23	1,309	182	3
Humpy Creek Subdistrict (241-14)	0	0	973	0			67,934	1,143	0	0	68,907	1,143
Halibut Cove Subdistrict (241-15)	1,835	159	2,110	46					1,835	159	2,110	46
China Poot Bay Subdistrict (241-09)	15,281	16	1,688	31			8,392		15,281	16	10,080	31
Neptune Bay Subdistrict (241-10)	2,216	2	1,557	12					2,216	2	1,557	12
Tutka Bay Subdistrict (241-16)	22,661	43	4,627	576			10,436		22,661	43	15,063	576
Barabara Creek Subdistrict (241-18)	1,063	0	728	93			27		1,063	0	755	93
Seldovia Bay Subdistrict (241-17)	3,375	0	153,595	263			44,722	431	3,375	0	198,317	694
Port Graham Subdistrict (241-20/-30)	60	29	21,645	349	3,444[c]		34,486	699	3,504	29	56,131	1,048
Total[d]	46,514	1,558	187,105	1,373	3,444		165,997	2,273	49,958	1,558	353,102	3,646

[a] Harvests include all commercial, subsistence, personal use and hatchery harvests.

[b] Unexpanded aerial or ground survey index count.

[c] Escapement from weir count minus broodstock harvest.

[d] Additional non-index streams where salmon were observed are also included. Therefore cumulative escapement values in this table are greater than escapement indices that historically contribute to SEG ranges as shown for index streams only.

Appendix A9.–Estimated pink and chum salmon escapements in thousands of fish for the major spawning systems in the Southern District of the Lower Cook Inlet Area, 1970–2012.

	Pink salmon							Chum salmon
	Humpy Creek	China Poot Creek	Tutka Lagoon Creek	Barabara Creek	Seldovia River	Port Graham River	Total pink salmon	Port Graham River
1970	55.2	1.5	6.5	0.4	23.0	16.6	103.2	0.9
1971	45.0	2.1	16.7	4.0	31.1	13.2	112.1	1.0
1972	13.8	1.0	1.5	0.6	5.8	2.4	25.1	1.5
1973	36.9	6.0	6.5		14.5	7.0	70.9	2.0
1974	17.4	5.2	2.6	0.2	13.7	2.8	41.9	0.5
1975	64.0	21.6	17.6	22.7	36.2	27.3	189.4	3.0
1976	27.2	2.0	11.5	0.2	25.6	6.5	73.0	0.4
1977	86.0	3.9	14.0	5.7	35.7	20.6	165.9	5.2
1978	46.1	11.2	15.0	1.4	24.6	6.7	105.0	4.8
1979	200.0	20.6	10.6	10.0	43.7	32.7	317.6	2.2
1980	64.4	12.3	17.3	5.8	65.5	40.2	205.5	1.1
1981	115.0	5.0	21.1	16.8	62.7	18.4	239.0	4.8
1982	31.9	3.1	18.5	2.1	38.4	28.9	122.9	2.5
1983	104.0	14.1	12.9	14.8	27.9	4.6	178.3	1.9
1984	84.2	8.4	10.5	1.0	14.2	10.9	129.2	2.1
1985	117.0	1.9	14.0	1.6	22.8	26.3	183.6	0.5
1986	49.7	11.5	13.4	1.8	28.2	17.5	122.1	0.6
1987	26.6	3.1	4.8	0.3	7.6	3.8	46.2	1.5
1988	21.4	3.9	11.2	0.7	16.9	7.9	62.0	3.0
1989	93.0	8.5	11.9	4.5	26.2	19.1	163.2	1.3
1990	27.0	4.2	38.5	3.9	27.8	20.1	121.5	2.6
1991	17.4	2.6	16.8	10.9	30.0	29.0	106.7	1.1
1992	14.9	4.1	26.7	2.2	14.7	5.4	68.0	1.4
1993	36.0	1.6	27.4	11.9	43.4	12.8	133.1	2.5
1994	14.1	5.7	14.5	4.5	24.4	7.6	70.8	5.2
1995	89.3	2.0	15.9	10.8	48.5	10.0	176.5	3.8
1996	9.0	2.8	3.5	2.4	17.8	7.0	42.5	3.7
1997	78.3	2.8	45.0	12.5	39.1	12.5	190.2	4.1
1998	17.5	5.7	17.5	2.8	31.5	12.6	87.6	5.1
1999	12.8	0.7	27.9	3.9	12.2	9.7	67.2	6.6
2000	22.4	7.5	19.0	5.6	53.5	15.6	123.6	11.4
2001	30.5	6.6	4.5	2.3	12.3	10.3	66.5	6.0
2002	37.1	6.5	15.9	3.2	26.9	58.5	148.1	5.3
2003	90.9	6.7	30.9	5.1	35.1	14.9	183.6	2.9
2004	28.9	3.3	17.8	5.4	56.8	44.0	156.2	1.2
2005	93.8	9.2	133.6	14.4	98.6	69.1	418.7	0.7
2006	48.4	7.2	25.8	3.6	70.0	31.2	186.2	2.2
2007	54.0	6.2	5.7	25.2	69.4	25.6	186.1	1.9
2008	90.9	5.1	14.1	16.6	53.5	24.7	204.9	1.8
2009	5.2	1.1	3.8	2.6	14.6	14.0	41.3	1.0
2010	70.7	2.2	2.1	13.9	25.9	16.6	131.5	1.4
2011	1.7	3.5	22.0	8.2	46.2	20.9	102.4	1.8
Prev. 10-yr average	52.2	5.1	27.2	9.8	49.7	31.9	175.9	2.0
2012	67.9	8.7	10.4	0.03	44.7	34.5	165.9	0.7

Note: Area under the curve escapement indices are derived from periodic ground surveys with a 17.5 day stream life factor applied.

APPENDIX B: OUTER DISTRICT

Appendix B1.–Outer District commercial purse seine salmon harvest by period, 2012.

			Permits		Chinook		Sockeye		Coho		Pink		Chum	
Period	Date	Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1 [a]	07/26–07/26	14	3	3	0	0	49	334	33	236	377	1,602	22	114
2 [a]	07/27–07/27	14	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
3 [a]	07/28–07/28	14	0	0	0	0	0	0	0	0	0	0	0	0
4 [c,d,e,f]	07/30–07/30	16	12	12	0	0	1	4	0	0	7,905	27,286	12,613	110,790
5 [c,d,e,f]	07/31–07/31	16	12	13	0	0	0	0	0	0	14,285	42,583	17,963	153,174
6 [c,d,e,f]	08/02–08/02	16	10	11	0	0	0	0	4	20	3,140	11,084	2,141	20,828
7 [c,d,e,f]	08/03–08/03	16	10	11	8	98	0	0	28	163	4,622	16,094	4,890	49,007
8 [c,d,e,f]	08/06–08/06	16	9	9	0	0	2	13	2	17	21,718	76,016	12,565	95,645
9 [c,d,e,f]	08/08–08/08	16	4	4	0	0	1	6	28	224	6,405	19,213	806	7,449
10 [d,e,f,g]	08/10–08/10	16	0	0	0	0	0	0	0	0	0	0	0	0
11 [d,e,f,g]	08/13–08/13	16	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
12 [d,e,f,g]	08/15–08/15	16	0	0	0	0	0	0	0	0	0	0	0	0
13 [d,e,f,g]	08/17–08/17	16	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
14 [d,e,f,g]	08/20–08/20	16	0	0	0	0	0	0	0	0	0	0	0	0
15 [d,e,f,g]	08/22–08/22	16	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
16 [d,e,f,h]	08/24–08/24	16	0	0	0	0	0	0	0	0	0	0	0	0
25 [d,e,f]	09/14–09/14	16	0	0	0	0	0	0	0	0	0	0	0	0
Total			15	70	8	98	77	523	98	682	69,359	230,285	51,313	439,438
Average weight						12.25		6.79		6.96		3.32		8.56

Note: Unless otherwise noted, regular closed waters were in effect.

[a] Waters of East Nuka Subdistrict open to commercial harvest in 14 hour periods.

[b] Confidential data. Fewer than 3 permits reporting.

[c] Waters of Rocky Bay Subdistrict open to commercial harvest in 16 hour periods.

[d] Waters of Rocky Bay Subdistrict open to commercial harvest.

[e] Waters of Koyuktolik (Dogfish) Bay Subdistrict open to commercial harvest in 16 hour periods

[f] Waters of Windy Bay Subdistrict open to commercial harvest in 16 hour periods.

[g] Waters of Outer and Taylor Bay sections of Port Dick Subdistrict open to commercial harvest in 16 hour periods.

[h] No deliveries reported during 16-hour periods 16–25 that occurred from August 24 to September 14.

Appendix B2.–Total commercial common property salmon harvest in Outer District 1959–2012.

Year	Permits	Landings	Chinook	Sockeye	Coho	Pink	Chum
1959			3	8,049	109	69,054	59,996
1960			4	11,614	574	381,375	67,187
1961			2	12,671	456	105,491	40,212
1962			2	8,697	1,893	1,684,023	126,767
1963			6	1,974	369	21,471	117,095
1964			2	1,370	431	767,473	269,514
1965			0	2,009	7	21,886	22,443
1966			1	3,120	357	398,751	87,620
1967			2	2,165	70	262,258	37,533
1968			1	1,550	106	191,691	20,398
1969			0	92	11	51,533	5,400
1970			5	1,037	243	434,700	137,408
1971			0	1,625	174	310,706	118,995
1972			7	26,092	17	963	43,466
1973			1	2,006	31	195,342	76,286
1974			1	206	21	1,300	11,924
1975			0	124	7	159,908	11,348
1976			7	18,886	0	93	412
1977			34	33,733	78	1,129,250	70,167
1978			236	10,695	45	70,080	19,224
1979			30	25,297	135	1,945,536	180,558
1980			10	22,514	16	154,041	32,246
1981			61	18,133	485	1,714,115	238,393
1982			129	66,781	92	67,523	63,075
1983			14	16,835	54	199,794	27,203
1984			3	28,411	90	89,068	3,077
1985	34	632	19	91,957	3,210	618,222	11,844
1986	40	539	6	48,472	5,052	401,755	11,701
1987	32	396	14	31,845	2,481	23,890	28,663
1988	32	185	5	9,501	2	6,094	71,202
1989	10	66	1	10,286	72	52,677	43
1990	47	265	2	17,404	74	191,320	614
1991	35	255	2	6,408	12	359,664	14,337
1992	5	6	0	572	1	146	181
1993	21	143	2	4,613	119	159,159	970
1994	6	17	0	5,930	993	13,200	32
1995	13	78	12	17,642	1,272	192,098	474
1996	3	12	0	14,999	96	7,199	3
1997	9	27	0	6,255	63	128,373	1,575
1998	10	41	0	15,991	45	102,172	611
1999	8	29	3	51,117	1,482	32,484	2,062
2000	11	72	2	21,623	20	306,555	302
2001	5	23	0	7,339	5	48,559	408
2002	11	86	0	21,154	74	569,955	3,810
2003	6	21	1	26,615	4	281,663	137
2004	9	25	2	11,082	13	42,636	27,911
2005	5	20	0	1	3	110,195	12,524
2006	11	162	3	3,198	1,139	1,121,892	12,883
2007	5	31	1	32,461	113	147,409	49
2008	16	146	0	1,704	0	467,592	100,819
2009	11	150	1	8	9	853,037	35,126
2010	10	101	0	3,003	16	272,427	22,463
2011	13	106	10	46,356	25	357,472	25,763
Previous 10-yr avg.	10	85	2	14,558	140	422,428	24,129
2012	15	70	8	77	98	69,359	51,313

Source: ADF&G fish ticket database.

Appendix B3.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement through the Delight Lake weir, 2012.

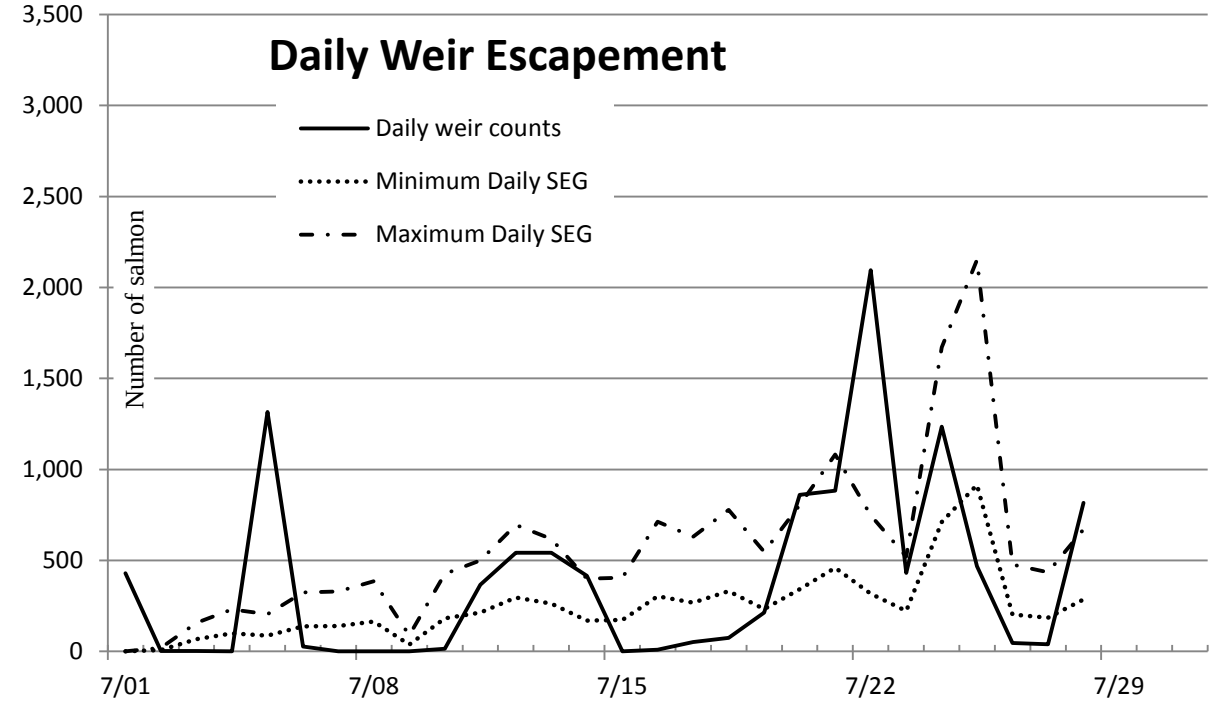
			Apportioned SEG (7,500 - 17,650)[a]				
	Actual passage		Projected minimum		Projected maximum		
Date	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Comments
01 Jul	430[b]	430	0	20	1	46	Weir fish tight by 7:00 PM Fish count for this date is based on aerial survey observations of Delight Lake.
02 Jul	2	432	8	28	19	66	
03 Jul	2	434	67	94	157	222	Aerial survey- 640 sockeye salmon
04 Jul	0	434	98	193	232	454	Rain, increased water level
05 Jul	1,316	1,750	87	280	205	659	Water level still increasing
06 Jul	27	1,777	137	417	323	982	
07 Jul	1	1,778	140	557	329	1,312	water level dropping/ manageable
08 Jul	0	1,778	164	721	386	1,697	water level dropping/manageable
09 Jul	0	1,778	38	759	88	1,786	
10 Jul	15	1,793	181	940	427	2,212	
11 Jul	367	2,160	213	1,153	500	2,713	Weir failure @ 14:00 due to high winds.
12 Jul	542	2,702	295	1,448	694	3,407	7/16 aerial survey observed fish parsed
13 Jul	542	3,244	262	1,710	617	4,024	over duration of weir failure. See footnote[c]
14 Jul	416	3,660	170	1,880	400	4,424	below. Weir reinstalled 17:00
15 Jul	1	3,661	172	2,052	405	4,829	
16 Jul	9	3,670	303	2,355	713	5,542	Aerial survey- 3,670 sockeye salmon
17 Jul	52	3,722	267	2,622	629	6,171	
18 Jul	74	3,796	330	2,953	778	6,949	
19 Jul	214	4,010	233	3,186	548	7,497	
20 Jul	860	4,870	342	3,528	805	8,302	
21 Jul	883	5,753	460	3,988	1,083	9,385	
22 Jul	2,095	7,848	317	4,305	747	10,132	
23 Jul	432	8,280	221	4,527	521	10,653	
24 Jul	1,235	9,515	711	5,237	1,672	12,325	
25 Jul	469	9,984	914	6,152	2,152	14,477	Aerial survey- 7,260 sockeye salmon
26 Jul	47	10,031	203	6,354	477	14,954	
27 Jul	39	10,070	185	6,539	435	15,389	
28 Jul	817	10,887[d]	285	6,824	670	16,059	Weir removed for the season. Aerial survey, 147 fish observed below the weir.

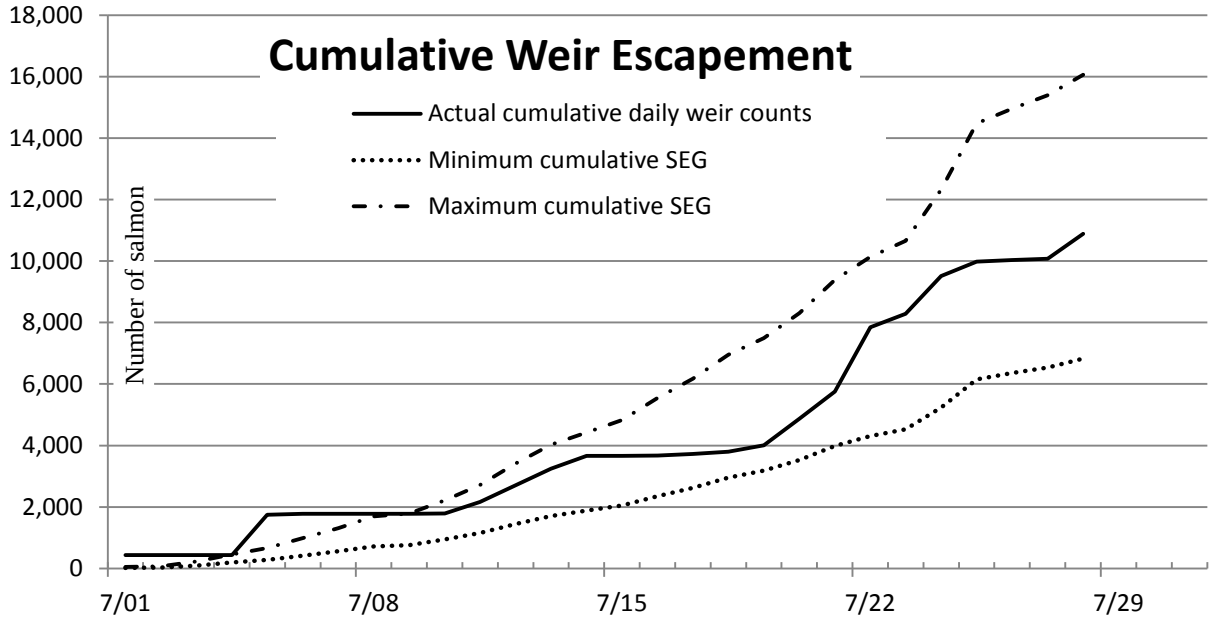
[a] Anticipated escapement derived from Delight Lake sockeye salmon SEG (sustainable escapement goal; 7,500–17,650 fish) apportioned using historical run timing.

[b] 430 sockeye salmon were documented in Delight Lake by aerial survey on June 28.

[c] 3,670 sockeye salmon observed on July 16 aerial survey in Delight Lake. This is a difference of 1,694 above the cumulative count for that date. This difference is parsed out over the 75 hours of lost weir time and prorated counts applied to the daily counts during this period.

[d] A survey was flown on July 28 after the weir was removed and counted an additional 147 fish downstream of the weir.





Note: Includes 2,124 fish observed during aerial surveys of the lake prior to weir installation, and after a high water event. Pre-weir fish were assigned to July 1 as a count date, and fish observed after the high water event were spread between the 4 days that the weir was washed out.

Appendix B4.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement past the Delight Lake weir, 2012.

Appendix B5.–Sockeye salmon escapement past the Delight and Desire Lake weirs, 1997–2012.

	Desire Lake	Delight Lake
Year	Sockeye salmon	Sockeye salmon
1997 [a]	14,665	27,820
1998 [b]	7,880	9,154
1999 [c]		13,431
2000 [d]		NA
2001 [e]		12,635
2002 [e]		17,655
2003 [e]		6,708
2004 [e]		3,842
2005 [e]		13,700
2006 [e]		10,879
2007 [e]		40,403
2008 [e]		21,333
2009 [e]		5,232
2010 [e]		23,505
2011 [e,f]		16,280
Previous 10-yr average		15,954
2012 [e,g]		10,887

[a] Weir operated from June 7 to August 26.

[b] Weir operated from June 20 to August 18.

[c] Weir operated from June 26 to August 27.

[d] Weir not operated at Delight Lake.

[e] Weir operated for the month of July.

[f] An additional 400 fish were observed in the lake during an aerial survey prior to weir installation, and 2,310 observed below the weir site after the weir was removed for the season. These 2,710 fish are not included in the 2011 weir total.

[g] Escapement includes 430 fish that were observed in the lake during an aerial survey prior to weir installation, but does not include 147 that were observed below the weir site after the weir was removed for the season.

Appendix B6.–Pink and chum salmon escapements measured by aerial survey using area under the curve estimation in Outer District, 2012.

Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escapement	Peak count
Delight Lake	pink	t_{start}	7/23											
		1	8/10	7/23	17.5	150	0	150	1,313	1,313	75	75	50%	
		^{t}end	8/27		17.5				1,313	2,625	75	150	100%	150
Desire Lake	pink	t_{start}	7/25											
		1	7/25	7/25	0	0	0	0	0	0	0	0	0%	
		2	8/10	7/25	16	2,210	0	2,210	17,680	17,680	1,010	1,010	48%	
		^{t}end	8/27		17.5				19,338	37,018	1,105	2,115	100%	2,210
Dogfish Lagoon	chum	t_{start}	7/7											
Creeks		1	7/25	7/7	17.5	1,460	0	1,460	12,775	12,775	730	730	8%	
		2	8/10	7/25	16	5,862	1,460	7,322	58,576	71,351	3,347	4,077	46%	
		3	8/16	8/10	6	1,270	5,862	7,132	21,396	92,747	1,223	5,300	60%	
		4	8/21	8/16	5	2,210	1,270	3,480	8,700	101,447	497	5,797	66%	
		5	9/7	8/21	17	2,000	2,210	4,210	35,785	137,232	2,045	7,842	89%	
		^{t}end	9/24		17.5				17,500	154,732	1,000	8,842	100%	5,862
Dogfish Lagoon	pink	t_{start}	7/25											
Creeks		1	7/25	7/25	0	0	0	0	0	0	0	0	0%	
		2	8/10	7/25	16	450	0	450	3,600	3,600	206	206	2%	
		3	8/16	8/10	6	40	450	490	1,470	5,070	84	290	3%	
		4	8/21	8/16	5	6,500	40	6,540	16,350	21,420	934	1,224	11%	
		5	9/7	8/21	17	7,120	6,500	13,620	115,770	137,190	6,615	7,839	69%	
		^{t}end	9/24		17.5				62,300	199,490	3,560	11,399	100%	7,120
James Lagoon	chum	t_{start}	7/23											
Creeks		1	8/10	7/23	17.5	139	0	139	1,216	1,216	70	70	50%	
		^{t}end	8/27		17.5				1,216	2,433	70	139	100%	139

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escapement	Peak count
Petrof River	chum	t_{start}	6/22											
		1	7/10	6/22	17.5	42	0	42	368	368	21	21	42%	
		2	7/16	7/10	6	32	42	74	222	590	13	34	68%	
		^{t}end	8/2		17.5				280	870	16	50	100%	42
Port Dick-	chum	t_{start}	6/22											
head end creek		1	7/10	6/22	17.5	420	0	420	3,675	3,675	210	210	3%	
		2	7/16	7/10	6	410	420	830	2,490	6,165	142	352	4%	
		3	7/25	7/16	9	1,900	410	2,310	10,395	16,560	594	946	11%	
		4	7/27	7/25	2	1,600	1,900	3,500	3,500	20,060	200	1,146	14%	
		5	8/3	7/27	7	7,600	1,600	9,200	32,200	52,260	1,840	2,986	36%	
		6	8/10	8/3	7	1,010	7,600	8,610	30,135	82,395	1,722	4,708	56%	
		7	8/16	8/10	6	5,240	1,010	6,250	18,750	101,145	1,071	5,780	69%	
		^{t}end	9/2		17.5				45,850	146,995	2,620	8,400	100%	7,600
Port Dick-	chum	t_{start}	7/7											
Middle Creek		1	7/25	7/7	17.5	130	0	130	1,138	1,138	65	65	15%	
		2	7/27	7/25	2	200	130	330	330	1,468	19	84	20%	
		3	8/3	7/27	7	230	200	430	1,505	2,973	86	170	40%	
		4	8/10	8/3	7	390	230	620	2,170	5,143	124	294	69%	
		5	8/16	8/10	6	100	390	490	1,470	6,613	84	378	88%	
		^{t}end	9/2		17.5				875	7,488	50	428	100%	390
Port Dick-	pink	t_{start}	7/25											
Middle Creek		1	7/25	7/25	0	0	0	0	0	0	0	0	0%	
		2	7/27	7/25	2	0	0	0	0	0	0	0	0%	
		3	8/10	7/27	14	0	0	0	0	0	0	0	0%	
		4	8/16	8/10	6	400	0	400	1,200	1,200	69	69	2%	
		5	9/7	8/16	22	2,820	400	3,220	35,420	36,620	2,024	2,093	60%	
		^{t}end	9/24		17.5				24,675	61,295	1,410	3,503	100%	2,820

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escapement	Peak count
Port Dick-	pink	t_{start}	7/25											
Slide Creek		1	7/25	7/25	0	0	0	0	0	0	0	0	0%	
		2	7/27	7/25	2	510	0	510	510	510	29	29	0%	
		3	8/3	7/27	7	1,200	510	1,710	5,985	6,495	342	371	4%	
		4	8/10	8/3	7	100	1,200	1,300	4,550	11,045	260	631	6%	
		5	8/16	8/10	6	3,600	100	3,700	11,100	22,145	634	1,265	13%	
		6	9/7	8/16	22	5,530	3,600	9,130	100,430	122,575	5,739	7,004	72%	
		^{t}end	9/24		17.5				48,388	170,963	2,765	9,769	100%	5,530
Rocky River	chum	t_{start}	7/7											
		1	7/25	7/7	17.5	420	0	420	3,675	3,675	210	210	7%	
		2	7/27	7/25	2	100	420	520	520	4,195	30	240	8%	
		3	8/3	7/27	7	2,060	100	2,160	7,560	11,755	432	672	21%	
		4	8/10	8/3	7	2,930	2,060	4,990	17,465	29,220	998	1,670	53%	
		^{t}end	8/27		17.5				25,638	54,858	1,465	3,135	100%	2,930
Rocky River	pink	t_{start}	7/7											
		1	7/25	7/7	17.5	300	0	300	2,625	2,625	150	150	1%	
		2	7/27	7/25	2	1,040	300	1,340	1,340	3,965	77	227	1%	
		3	8/3	7/27	7	600	1,040	1,640	5,740	9,705	328	555	4%	
		4	8/10	8/3	7	5,200	600	5,800	20,300	30,005	1,160	1,715	11%	
		5	9/7	8/10	28	7,530	5,200	12,730	178,220	208,225	10,184	11,899	76%	
		^{t}end	9/24		17.5				65,888	274,113	3,765	15,664	100%	7,530
South Nuka	pink	t_{start}	7/23											
Island Creek		1	8/10	7/23	17.5	450	0	450	3,938	3,938	225	225	50%	
		^{t}end	8/27		17.5				3,938	7,875	225	450	100%	450

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escapement	Peak count
Taylor Bay	pink	t_{start}	7/23											
Creek		1	8/10	7/23	17.5	400	0	400	3,500	3,500	200	200	10%	
		2	9/7	8/10	28	1,200	400	1,600	22,400	25,900	1,280	1,480	71%	
		^{t}end	9/24		17.5				10,500	36,400	600	2,080	100%	1,200
Windy Bay-	pink	t_{start}	7/7											
Left Creek		1	7/25	7/7	17.5	2,210	0	2,210	19,338	19,338	1,105	1,105	9%	
		2	7/27	7/25	2	3,500	2,210	5,710	5,710	25,048	326	1,431	12%	
		3	8/3	7/27	7	6,120	3,500	9,620	33,670	58,718	1,924	3,355	29%	
		4	8/10	8/3	7	9,460	6,120	15,580	54,530	113,248	3,116	6,471	55%	
		5	8/16	8/10	6	4,300	9,460	13,760	41,280	154,528	2,359	8,830	76%	
		6	9/7	8/16	22	140	4,300	4,440	48,840	203,368	2,791	11,621	99%	
		^{t}end	9/24		17.5				1,225	204,593	70	11,691	100%	9,460

Source: Bue et al. 1998.

Note: Final counts include fish observed in bays if no further harvest occurred.

[a] Fish days (A_b) = (Days between surveys * (prev. count + current count)) ÷ 2

[b] Escapement index = A_b / 17.5 day streamlife estimate.

[c] Area under the curve estimate equals the cumulative escapement index.

Appendix B7.–Pink and chum salmon escapements as measured by ground survey using area under the curve estimation in Outer District, 2012.

Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Carcass Count	Live plus Carcass
Port Chatham Creeks	chum	t_{start}	8/6												
		1	8/24	8/6	17.5	33	0	33	289	289	17	17	50%	5	38
		^{t}end	9/10		17.5				289	578	17	33	100%		
Port Chatham Creeks	pink	t_{start}	8/6												
		1	8/24	8/6	17.5	4,282	0	4,282	37,468	37,468	2,141	2,141	50%	1,148	5,430
		^{t}end	9/10		17.5				37,468	74,935	2,141	4,282	100%		
Port Dick-head end creek	pink	t_{start}	7/9												
		1	7/9	7/9	0	0	0	0	0	0	0	0	0%		0
		2	7/19	7/9	10	69	0	69	345	345	20	20	0%		69
		3	8/6	7/19	18	9,598	69	9,667	87,003	87,348	4,972	4,991	28%	67	9,665
		4	8/22	8/6	16	9,067	9,598	18,665	149,320	236,668	8,533	13,524	75%	1,695	10,762
		^{t}end	9/8		17.5				79,336	316,004	4,534	18,057	100%		
Port Dick-Island Creek	chum	t_{start}	7/20												
		1	8/7	7/20	17.5	8,345	0	8,345	73,019	73,019	4,173	4,173	28%	46	8,391
		2	8/17	8/7	10	7,238	8,345	15,583	77,915	150,934	4,452	8,625	58%	1,093	8,331
		3	9/7	8/17	21	1,723	7,238	8,961	94,091	245,024	5,377	14,001	94%	1,954	3,677
		^{t}end	9/24		17.5				15,076	260,101	862	14,863	100%		
Port Dick-Island Creek	pink	t_{start}	7/20												
		1	8/7	7/20	17.5	19	0	19	166	166	10	10	0%		19
		2	8/17	8/7	10	669	19	688	3,440	3,606	197	206	1%	3	672
		3	9/7	8/17	21	17,701	669	18,370	192,885	196,491	11,022	11,228	56%	92	17,793
		^{t}end	9/24		17.5				154,884	351,375	8,851	20,079	100%		
Port Dick-Slide Creek	chum	t_{start}	6/21												
		1	7/9	6/21	17.5	4	0	4	35	35	2	2	0%		4
		2	7/19	7/9	10	497	4	501	2,505	2,540	143	145	2%	1	498
		3	8/6	7/19	18	5,721	497	6,218	55,962	58,502	3,198	3,343	40%	432	6,153
		4	8/22	8/6	16	2,525	5,721	8,246	65,968	124,470	3,770	7,113	85%	1,150	3,675
		^{t}end	9/8		17.5				22,094	146,564	1,263	8,375	100%		

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Carcass Count	Live plus Carcass
Windy Bay	chum	t_{start}	7/9												
Left Creek		1	7/27	7/9	17.5	21	0	21	184	184	11	11	41%		21
		2	8/21	7/27	25	0	21	21	263	446	15	26	100%	0	0
		3	9/7	8/21	17	0	0	0	0	446	0	26	100%	0	0
		^{t}end	9/7		0				0	446	0	26	100%		
Windy Bay	chum	t_{start}	7/9												
Right Creek		1	7/27	7/9	17.5	194	0	194	1,698	1,698	97	97	33%		194
		2	8/21	7/27	25	49	194	243	3,038	4,735	174	271	92%	35	84
		3	9/7	8/21	17	0	49	49	417	5,152	24	294	100%	0	0
		^{t}end	9/7		0				0	5,152	0	294	100%		
Windy Bay	pink	t_{start}	7/9												
Right Creek		1	7/27	7/9	17.5	441	0	441	3,859	3,859	221	221	4%		441
		2	8/21	7/27	25	3,797	441	4,238	52,975	56,834	3,027	3,248	56%	409	4,206
		3	9/7	8/21	17	742	3,797	4,539	38,582	95,415	2,205	5,452	94%	316	1,058
		^{t}end	9/24		17.5				6,493	101,908	371	5,823	100%		

Source: Bue et al. 1998.

Note: Final counts include fish observed in bays if no further harvest occurred.

[a] Fish days (A_b) = (Days between surveys * (prev. count + current count)) ÷ 2

[b] Escapement index = A_b / 17.5 day streamlife estimate.

[c] Area under the curve estimate equals the cumulative escapement index.

Appendix B8.–Sockeye salmon aerial survey counts from the Outer District, 2012.

Location	Survey number	Survey date	Live count	Peak count
Delusion Lake	1	07/25/12	420	420
Desire Lake	1	06/28/12	620	
	2	07/03/12	190	
	3	07/16/12	3,510	
	4	07/25/12	8,820	8,820

Appendix B9.–Unexpanded escapement indices and harvests by subdistricts in the Outer District, Lower Cook Inlet, 2012.

	Harvest[a]				Escapement index[b]				Combined harvest and escapement index counts			
Location	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum
Dogfish Bay Subdistrict (232-01)							11,399	8,842	0	0	11,399	8,842
Port Chatham Subdistrict (232-02)							5,430		0	0	5,430	0
Chugach Bay Subdistrict (232-03)									0	0	0	0
Windy Bay Subdistrict (232-04)							17,514		0	0	17,514	0
Rocky Bay Subdistrict (232-05)		2	10,122	11,238			15,684		0	2	25,806	11,238
Outer Port Dick Subdistrict (232-06)	1	4	24,739	7,979					1	4	24,739	7,979
Port Dick South Subdistrict (232-07)	3	2	29,822	25,532			18,057	8,400	3	2	47,879	33,932
Port Dick North Subdistrict (232-09)			129	105			33,351	23,666	0	0	33,480	23,771
Taylor Bay Subdistrict (232-08)		24	1,917	250			2,080		0	24	3,997	250
Port Dick area subtotal	4	32	66,729	45,104			69,172	32,066	4	32	135,901	77,170
E. Side Gore Pt. Subdistrict (232-10)									0	0	0	0
Nuka Island Subdistrict (232-15)							450	50	0	0	450	50
East Nuka Subdistrict (232-23)	73	36	480	24	20,850		2,360	139	20,923	36	2,840	163
Outer District total[c]	77	68	67,209	45,128	20,850		106,325	41,097	20,927	68	173,534	86,225

[a] Harvests include all commercial and subsistence harvests.

[b] Unexpanded aerial or ground survey index count, or weir count. Also includes non-index streams.

[c] Additional non-index streams where salmon were observed are also included. Therefore cumulative escapement values in this table are greater than escapement indices that historically contribute to SEG ranges as shown for index streams only.

Appendix B10.–Estimated pink, chum and sockeye salmon escapements in thousands of fish for the major spawning systems in the Outer District of the Lower Cook Inlet Area, 1970–2012.

	Pink salmon											Chum salmon					Sockeye salmon			
Year	Dogfish Lagoon[a]	Port Chatham	Windy Right Creek	Windy Left Creek	Rocky River	Port Dick Creek	Island Creek	South Nuka Creek	Desire Lake Creek	James Lagoon[a]	Total index count	Dogfish Lagoon	Rocky River	Port Dick Creek	Island Creek	Total index count	Delusion Lake[a]	Delight Lake	Desire Lake	Total index count
1970		3.0	2.1	13.0	32.0	34.5	5.5	11.0			101.1	5		6	8.5	20	–	4.6	2.0	6.6
1971	0.3	15.5	13.0	35.4	1.6	97.8	0.1	14.0	30.0		207.7	5	7	3	3.5	19	–	5.0	5.0	10.0
1972		1.0	0.1	0.4	8.2	10.0	1.7	0.3	0.3		22.0	3	3	6	2	14	–	10.0	8.0	18.0
1973	1.0	5.0	4.6	12.9	2.0	26.4	0.5	16.0	3.0		71.4	1	2	9	7	19	–	2.5	5.2	7.7
1974		0.2	0.1	0.1	1.5	1.5	0.5				3.9	0.6	1	0.8	5	7.4	–	–	–	0.0
1975	2.3	7.7	18.7	9.7	4.4	62.8	0.1	28.0	0.4		134.1	5	25	4	7.4	41	–	2.0	6.5	8.5
1976			0.2	0.2	2.7	12.7			0.6		16.4	3	12	1.5	1	18	–	6.0	11.0	17.0
1977	8.1	14.2	11.1	47.3	36.7	109.3	0.6	12.0	0.8		240.1	6.4	11	5	11	33	–	5.2	10.7	15.9
1978	0.6	0.3	0.3	1.1	8.2	44.9	0.4		1.0		56.8	9.3	6.3	8.9	17	41	–	8.0	10.0	18.0
1979	7.3	20.8	10.4	74.8	85.0	116.0	0.6	15.0	3.0		332.9	8.2	35	4	17	64	–	8.0	12.0	20.0
1980	0.3	7.7	3.3	10.9	6.4	56.1	2.2	0.3	16.0	4.6	107.8	4	23	4.2	11	42	–	10.0	17.0	27.0
1981	2.6	11.2	4.7	31.3	25.0	106.0	25.0	16.0	5.0	14	240.8	12	13	4.1	18	46	–	7.3	12.0	19.3
1982	2.6	2.0	4.7	4.4	6.6	19.9	15.0	0.4	12.0	6	65.0	8.5	2.8	1.7	8.7	22	–	25.0	18.0	43.0
1983	1.0	3.5	4.3	11.9	16.6	64.1	15.3	22.2	8.5	5.1	146.4	5.3	4	4.5	36	50	–	7.0	12.0	19.0
1984	0.6	7.8	3.4	2.5	9.0	44.6	35.0	0.6	23.0	4	125.9	8.6	3.5	2.7	26	40	–	10.5	15.0	25.5
1985	0.2	8.9	5.4	8.9	12.1	65.3	27.9	3.6	62.5	9	194.6	4.9	2.5	1	9.1	18	–	26.0	18.0	44.0
1986	0.4	11.5	2.5	2.2	12.0	41.6	16.6	7.0	32.0	6.6	125.4	2.5	2	1.7	8.6	15	–	13.0	10.0	23.0
1987	1.2	10.2	2.0	5.6	4.5	4.5	0.1	2.8	11.0	1.1	40.7	2	0.2	6.1	13	22	–	10.5	13.4	23.9
1988	0.3	21.0	1.3	3.4	5.4	12.0	7.2	1.2	2.5	1.7	54.0	8.6	0.3	9	7.8	26	–	1.2	9.0	10.2
1989	0.2	31.7	6.6	25.2	10.3	55.4	6.7	7.3	47.0	4.9	190.2	1.8	1.2	3.3	4.8	11	2.0	7.7	9.0	18.7
1990	7.1	27.8	7.1	7.5	18.0	41.7	25.0	13.3	1.0	3.8	141.4	1	0.8	1.1	2.3	5.2	0.3	5.2	9.5	15.0
1991	9.3	23.8	20.7	34.5	26.1	54.2	24.4	16.4	1.3	4.4	201.4	3.1		7.4	17	28	0.3	4.1	8.2	12.6
1992		4.3	3.9	8.2	25.4	6.9	12.5	6.1	0.4	0.4	67.7	0.8	1.7	5.4	6.7	15	1.0	5.9	11.9	18.8
1993	0.3	22.2	13.6	25.9	70.0	37.0	12.1	34.3	19.3	3.3	234.4	5.4	0.1	2.5	3.6	12	1.3	5.6	11.0	17.9
1994	1.3	3.3	2.2	3.0	17.1	18.1	28.3	1.4		0.8	73.4	11	1.9	3.5	8.8	26	1.3	5.6	10.5	17.4
1995	13.3	14.0	11.4	31.6	56.3	6.6	10.6	6.2		0.6	136.7	4.2	5.1	3.3	7.7	20	1.5	15.8	15.8	33.1
1996	2.3	8.6	9.9	2.5	80.1	23.2	40.1	6.8			171.2	6.7	2	2.3	6.9	18	0.7	7.7	9.4	17.8

-continued-

Appendix B10.–Page 2 of 2.

	Pink salmon											Chum salmon					Sockeye salmon			
Year	Dogfish Lagoon[a]	Port Chatham	Windy Right Creek	Windy Left Creek	Rocky River	Port Dick Creek	Island Creek	South Nuka Creek	Desire Lake Creek	James Lagoon[a]	Total index count	Dogfish Lagoon	Rocky River	Port Dick Creek	Island Creek	Total index count	Delusion Lake[a]	Delight Lake	Desire Lake	Total index count
1996	2.3	8.6	9.9	2.5	80.1	23.2	40.1	6.8			171.2	6.7	2	2.3	6.9	18	0.7	7.7	9.4	17.8
1997	20.0	42.7	13.9	64.6	48.1	36.9	71.1	9.3	6.2		292.8	13	1.1	1.9	5.2	21	1.4	27.8[b]	14.7	43.9
1998	6.7	22.2	19.5	12.9	165.0	59.1	83.6	14.0	6.2		382.5	9.8	0.7	1.8	3.4	16	1.1	9.2[b]	7.9	18.2
1999	12.4	10.7	5.2	24.0	17.2	8.5	8.6	2.4	6.8		83.4	19	5.4	2.9	16	44	1.1	17.0	14.6	32.7
2000	11.1	16.7	23.0	20.1	131.6	124.4	70.8	13.6	21.1	3.9	421.3	20	4.2	3.4	12	39	2.1	12.3	4.0	18.4
2001	2.0	17.9	10.3	61.8	73.0	44.7	81.8	20.7	67.5	2.3	377.7	6.1	3	1.8	6.3	17	2.8	10.1	5.5	18.4
2002	1.3	18.1	14.4	28.9	112.5	108.0	44.1	14.8	78.4	3.1	419.2	10	5.7	12	15	43	3.6	19.6[c]	16.0	39.2
2003	5.2	35.0	23.3	82.8	287.4	107.7	118.6	41.4	34.8		731.0	13	5.5	5.6	16	41	2.0	7.5[c]	8.4	17.9
2004	3.2	26.4	12.0	23.3	53.8	13.3	33.6	6.4	24.3		193.1	3.6	17	8.6	15	45	1.0	7.3[c]	10.7	19.0
2005	22.3	44.4	22.2	72.0	198.7	122.2	26.4	11.2	46.0		543.1	2.7	6.1	4.8	21	34	1.1	15.2[c]	4.8	21.1
2006	8.0	24.2	17.1	65.2	67.8	51.5	107.7	5.1	74.8		413.4	5.4	11	2.8	5.6	25	1.0	10.9[c]	18.6	30.5
2007	4.1	14.5	18.3	37.3	190.0	44.2	87.2	6.6	11.8		409.9	4.9	1.6	2.8	3.1	12	2.1	44.0[c]	10.0	56.1
2008	8.0	16.4	12.5	64.1	90.9	34.2	49.7	12.3	9.5		289.6	6.2	3.8	12	13	35	1.8	23.9[c]	10.7	36.4
2009	9.2	25.3	15.0	57.3	173.6	41.7	44.5	19.9	73.9		451.2	4.4	2.5	5.6	9.3	22	1.3	12.7	16.0	30.0
2010	6.3	3.0	6.4	24.2	27.0	41.1	69.5		3.0		174.3	13	1.3	2.4	3.4	20	0.6	23.8[c]	6.3	30.7
2011	3.9	15.8	1.7	12.2	22.7	16.9	10.2	–	0.6	0.3	80.1	12.9	4.5	7.1	11.8	36	1.8	20.2	9.6	31.6
Prev 10-yr avg.	7.2	22.3	14.3	46.7	122.4	58.1	59.2	14.7	35.7	1.7	373.4	6.9	5.8	5.8	10.8	29	1.7	17.5	10.7	29.9
2012	11.4	5.4	5.8	11.7	15.7	18.1	20.1	0.5	2.2	0.0	79.4	8.8	3.1	8.4	14.9	35		10.9[c]	8.8	19.7

[a] Non-index stream.

[b] Escapement derived from weir counts.

[c] Escapement derived from a combination of weir, video counts, and/or aerial counts.

APPENDIX C: EASTERN DISTRICT

Appendix C1.–Eastern District common property commercial purse seine salmon harvest by period, 2012.

Period [a]	Date	Hours	Permits Fished	Permits Landings	Chinook Number	Chinook Pounds	Sockeye Number	Sockeye Pounds	Coho Number	Coho Pounds	Pink Number	Pink Pounds	Chum Number	Chum Pounds
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
Total					0	0	0	0	0	0	0	0	0	0
Average weight						0.00		0.00		0.00		0.00		0.00

No commercial common property fishery in 2012.

Appendix C2.–Historic commercial common property and derby commercial sales harvest by species in the Eastern District, 1959–2012.

		Commercial Common property harvest					Derby sales
Year	Permits	Chinook	Sockeye	Coho	Pink	Chum	Coho
1959	–	58	4,319	5,491	125	13,301	
1960	–	0	105	853	8,720	467	
1961	–	0	0	0	0	0	
1962	–	0	0	3,728	49	10	
1963	–	0	1	2,250	11	0	
1964	–	0	22	9	813	12	
1965	–	0	0	0	0	0	
1966	–	0	0	0	0	0	
1967	–	0	348	203	3,097	275	
1968	–	2	74,484	5	41,464	872	
1969	–	3	99,403	6	1	10	
1970	–	11	4,895	691	50,946	1,305	
1971	–	32	2,203	1,115	5	423	
1972	–	12	413	903	18,232	767	
1973	–	5	3,057	801	1,919	55	
1974	–	0	193	524	378	7	
1975	–	0	596	124	383	2	
1976	–	0	5	200	35,423	45	
1977	–	0	5,776	360	1,349	3,229	
1978	–	0	2	582	29,738	100	
1979	–	0	0	296	0	0	
1980	–	0	122	426	155,779	720	
1981	–	0	9,270	470	44,989	3,279	
1982	–	0	3,092	950	143,639	7,698	
1983	–	0	25,932	594	36,154	7,934	
1984	–	47	54,459	536	135,290	10,534	
1985	14	11	24,311	1	92,403	5,146	
1986	10	0	3,055	3	40,243	3,757	
1987	9	0	3,687	1	14,333	14,913	
1988	13	1	20,253	1	1,740	24,668	
1989	12	0	8,538	3,913	92	312	
1990	8	0	7,682	127	11,815	307	1,642
1991	6	1	4,703	331	167,250	80	917
1992	7	0	432	1,131	60,007	86	477
1993	6	0	171	247	10,616	9	1,428
1994	6	1	1,610	3,835	44,987	2,792	1,608
1995	19	0	25,626	918	12,000	330	2,960
1996	17	0	36,981	1	35	223	2,600
1997	9	0	11,044	0	1	66	2,167
1998	7	1	9,797	1,094	38,829	51	2,554
1999	11	1	22,682	3	1,930	1,232	1,289
2000	13	0	19,193	332	4,099	1,273	1,689
2001	3	0	2,629	0	0	6	2,155
2002	7	0	14,647	0	0	5	2,687
2003	10	0	7,341	0	0	19	3,821
2004	8	0	16,645	0	0	1	4,400
2005	15	0	19,297	3	13,072	385	4,788
2006	13	0	32,393	1	3,460	270	2,274
2007	11	0	15,407	0	0	53	2,850
2008	11	0	57,060	0	0	34	1,223
2009	0	0	0	0	0	0	1,570
2010	0	0	0	0	0	0	1,100
2011	16	0	56,111	0	24	112	1,207
Previous 10-year average		0	16,542	0	1,653	77	2,687
2012	0	0	0	0	0	0	1,400

Source: ADF&G fish ticket database.

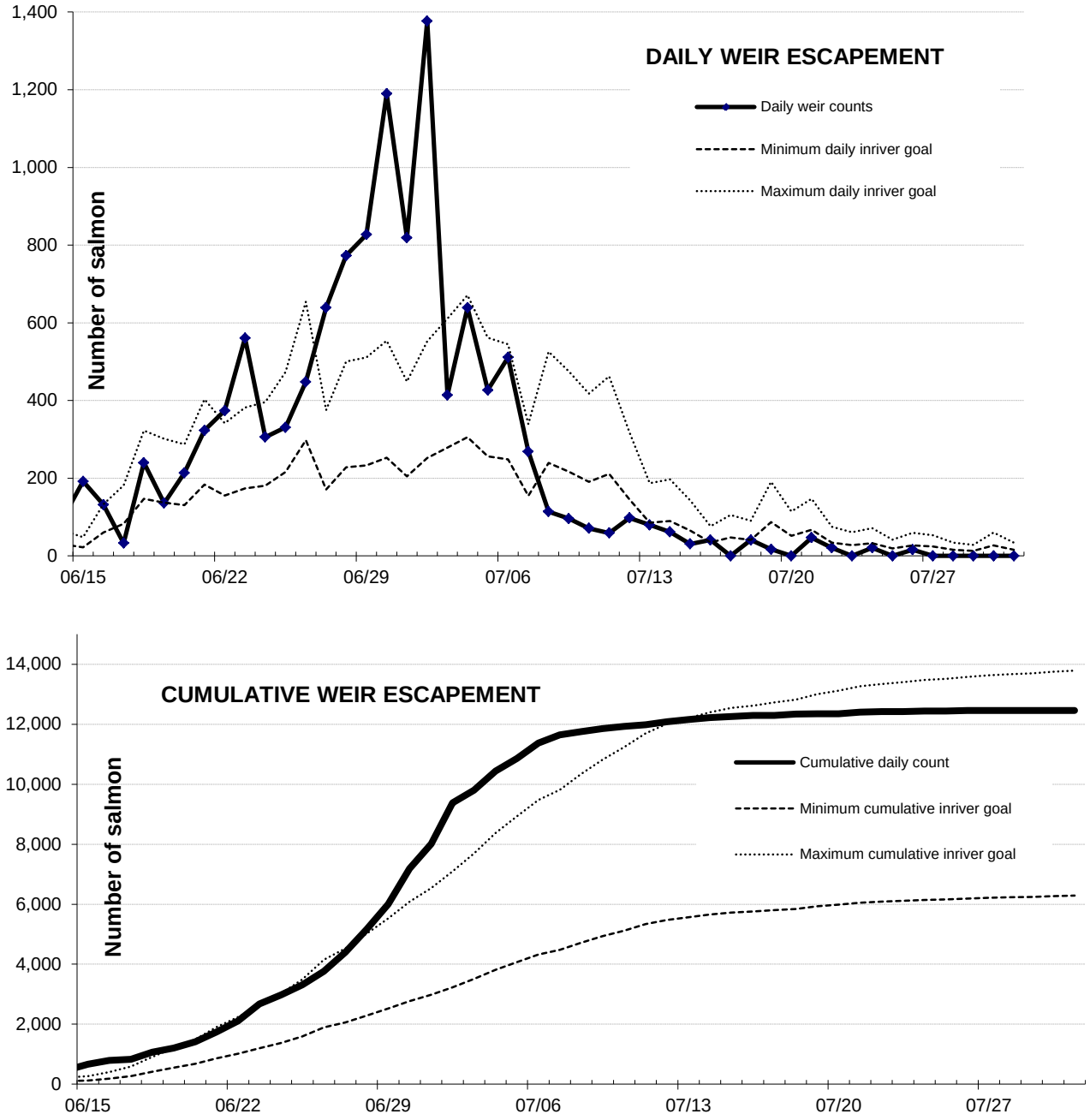
Appendix C3.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement through the Bear Creek weir, 2012.

	Escapement to Bear Lake		SEG plus CIAA brood goal [a]				Weir harvest[b]		Morts		Total sockeye at Bear Creek weir	
			Minimum		Maximum							
Date	Daily	Total	Daily	Total	Daily	Total	Daily	Total	Daily	Total	Daily	Total
06 Jun	12	13	0	6	1	13					12	13
07 Jun	0	13	1	7	3	16					0	13
08 Jun	0	13	1	9	3	19					0	13
09 Jun	91	104	6	14	12	31					91	104
10 Jun	155	259	33	47	72	103					155	259
11 Jun	36	295	13	60	28	131					36	295
12 Jun	17	312	12	71	26	157					17	312
13 Jun	59	371	30	101	65	222					59	371
14 Jun	98	469	22	123	48	270					98	469
15 Jun	192	661	60	184	133	402					192	661
16 Jun	132	793	83	266	182	584					132	793
17 Jun	33	826	147	414	323	907					33	826
18 Jun	240	1,066	137	551	301	1,208					240	1,066
19 Jun	136	1,202	131	682	288	1,496					136	1,202
20 Jun	214	1,416	184	866	403	1,899					214	1,416
21 Jun	323	1,739	156	1,022	342	2,241					323	1,739
22 Jun	374	2,113	174	1,196	382	2,622					374	2,113
23 Jun	561	2,674	181	1,376	396	3,019					561	2,674
24 Jun	306	2,980	216	1,592	474	3,492					306	2,980
25 Jun	331	3,311	298	1,891	654	4,146					331	3,311
26 Jun	448	3,759	171	2,062	375	4,521					448	3,759
27 Jun	639	4,398	228	2,290	500	5,022					639	4,398
28 Jun	773	5,171	233	2,523	511	5,533					773	5,171
29 Jun	827	5,998	253	2,775	554	6,087					827	5,998
30 Jun	1,190	7,188	205	2,980	449	6,536	12	12			1,202	7,200
01 Jul	819	8,007	252	3,232	553	7,088		12			819	8,019
02 Jul	1,377	9,384	279	3,511	611	7,699		12			1,377	9,396
03 Jul	414	9,798	306	3,817	671	8,370	247	259			661	10,057
04 Jul	639	10,437	256	4,073	562	8,932	247	506			886	10,943
05 Jul	427	10,864	249	4,321	545	9,477	8	514			435	11,378
06 Jul	511	11,375	155	4,476	340	9,817	496	1,010			1,007	12,385
07 Jul	269	11,644	240	4,716	526	10,342	31	1,041	4	4	304	12,689
08 Jul	114	11,758	217	4,933	475	10,818	16	1,057	1	5	131	12,820
09 Jul	96	11,854	190	5,123	418	11,235	194	1,251	3	8	293	13,113
10 Jul	71	11,925	211	5,334	463	11,698	16	1,267	1	9	88	13,201
11 Jul	59	11,984	145	5,479	319	12,017	19	1,286		9	78	13,279
12 Jul	98	12,082	85	5,565	187	12,204	8	1,294	1	10	107	13,386
13 Jul	80	12,162	90	5,655	197	12,401	18	1,312		10	98	13,484
14 Jul	62	12,224	65	5,720	143	12,544	199	1,511		10	261	13,745
15 Jul	31	12,255	35	5,755	76	12,620	5	1,516		10	36	13,781
16 Jul	41	12,296	48	5,803	105	12,726	4	1,520		10	45	13,826
17 Jul	0	12,296	41	5,844	91	12,816	85	1,605		10	85	13,911
18 Jul	41	12,337	87	5,931	191	13,007	28	1,633		10	69	13,980
19 Jul	17	12,354	52	5,983	114	13,122	29	1,662	17	27	63	14,043
20 Jul	0	12,354	67	6,050	147	13,269	14	1,676	22	49	36	14,079
21 Jul	47	12,401	34	6,085	75	13,344	5	1,681	16	65	68	14,147
22 Jul	21	12,422	28	6,112	61	13,405	19	1,700	14	79	54	14,201
23 Jul	0	12,422	33	6,145	72	13,477	27	1,727	17	96	44	14,245
24 Jul	21	12,443	19	6,164	42	13,519	33	1,760	9	105	63	14,308
25 Jul	0	12,443	27	6,191	60	13,579	7	1,767	6	111	13	14,321
26 Jul	16	12,459	24	6,216	53	13,632	2	1,769	4	115	22	14,343
27 Jul	0	12,459	16	6,231	34	13,666	10	1,779	2	117	12	14,355
28 Jul	0	12,459	13	6,244	29	13,695	8	1,787	3	120	11	14,366
29 Jul	0	12,459	27	6,272	60	13,755	9	1,796			9	14,375
30 Jul	0	12,459	16	6,288	34	13,789		1,796			0	14,375
31 Jul	0	12,459	9	6,296	19	13,808	6	1,802			6	14,381

Note: Bear Creek sustainable escapememnt goal is 700–8,300 sockeye salmon. CIAA broodstock goal is 5,670 for a desired inriver return of 6,370–13,970 fish.

[a] Projected daily goal based on expected run timing applied to minimum and maximum cumulative goals at the end of the run.

[b] Weir harvest is cost recovery and donations of excess fish above daily SEG plus broodstock needs.



Note: A total of 14,381 sockeye salmon returned to the Bear Creek weir in 2012. Of those 12,459 were passed through the weir into Bear Lake. An additional 1,802 were harvested at the weir for cost recovery. A total of 4,428 were harvested from Bear Lake for use as hatchery broodstock with 120 morts counted. Total estimated natural spawning escapement is estimated at 7,911 fish. "Inriver goal" is the sustainable escapement goal range (700–8,300) added to the CIAA hatchery broodstock goal (5,670) for this species.

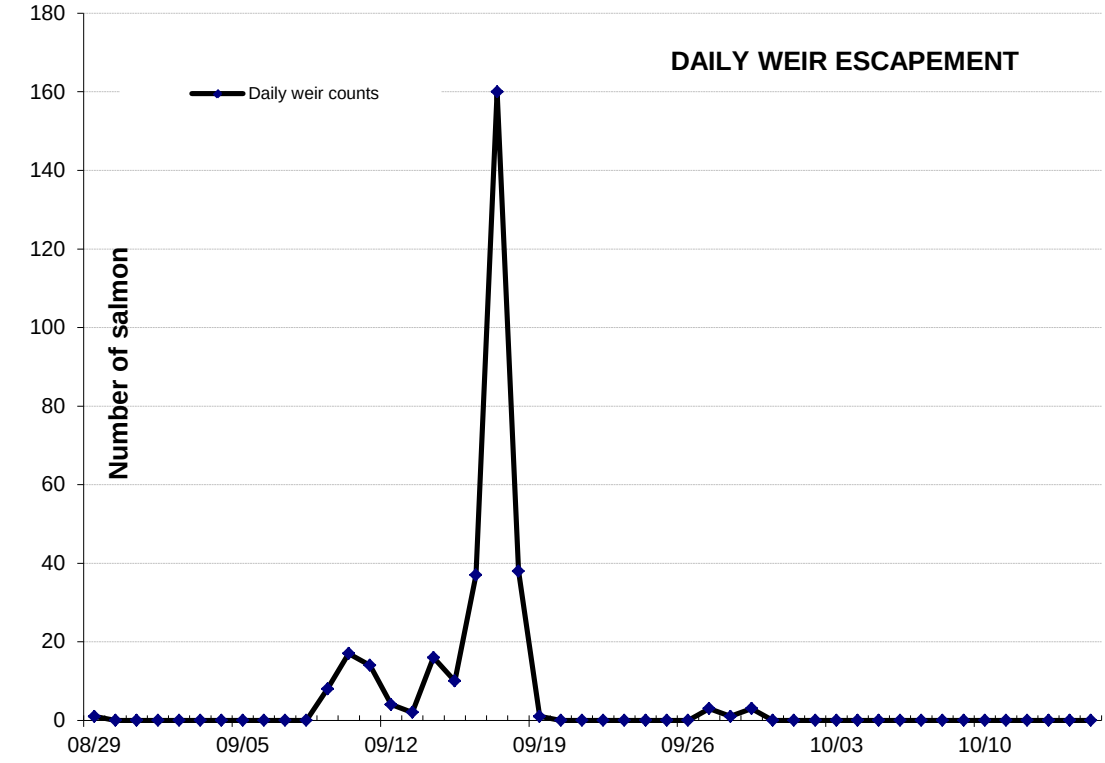
Appendix C4.–Sockeye salmon passage past Bear Creek weir versus minimum and maximum inriver goals, 2012.

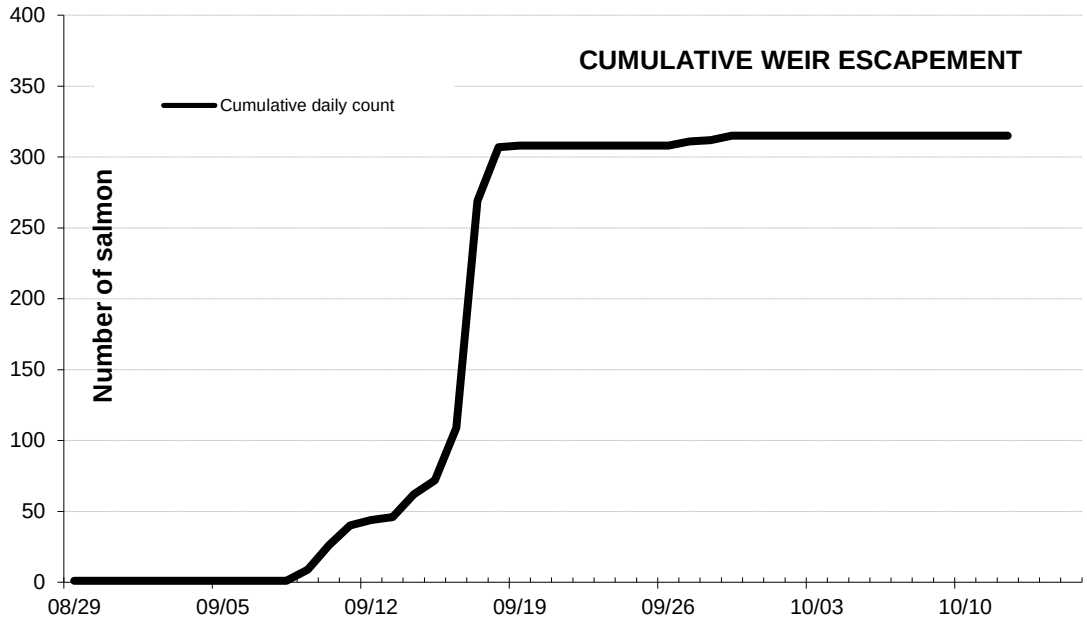
Appendix C5.–Coho salmon escapement through the Bear Creek weir, 2012.

	Escapement to Bear Lake		Hatchery Broodstock[a]		Weir Harvest[b]		Cumulative coho at Bear Creek weir		
Date	Daily	Total	Daily	Total	Daily	Total	Daily	Total	Comments
29 Aug	1	1					1	1	
30 Aug	0	1					0	1	
31 Aug	0	1					0	1	
01 Sep	0	1					0	1	
02 Sep	0	1					0	1	
03 Sep	0	1					0	1	
04 Sep	0	1					0	1	
05 Sep	0	1					0	1	
06 Sep	0	1					0	1	
07 Sep	0	1					0	1	
08 Sep	0	1					0	1	
09 Sep	8	9					8	9	
10 Sep	17	26					17	26	
11 Sep	14	40					14	40	
12 Sep	4	44					4	44	
13 Sep	2	46					2	46	
14 Sep	16	62					16	62	
15 Sep	10	72					10	72	
16 Sep	37	109					37	109	
17 Sep	160	269					160	269	
18 Sep	38	307	68	68			106	375	
19 Sep	1	308	75	143			76	451	
20 Sep	0	308	13	156			13	464	
21 Sep	0	308	7	163			7	471	
22 Sep	0	308	32	195			32	503	
23 Sep	0	308	19	214			19	522	
24 Sep	0	308	30	244			30	552	
25 Sep	0	308	56	300			56	608	
26 Sep	0	308	51	351			51	659	
27 Sep	3	311	68	419			71	730	
28 Sep	1	312	19	438	6	6	26	756	
29 Sep	3	315	29	467	21	27	53	809	
30 Sep	0	315	8	475	4	31	12	821	
01 Oct	0	315	15	490			15	836	
02 Oct	0	315	7	497			7	843	
03 Oct	0	315	22	519			22	865	
04 Oct	0	315	21	540			21	886	
05 Oct	0	315	4	544			4	890	
06 Oct	0	315	19	563			19	909	
07 Oct	0	315	11	574			11	920	
08 Oct	0	315	0	574			0	920	
09 Oct	0	315	0	574			0	920	
10 Oct	0	315	0	574			0	920	
11 Oct	0	315	2	576			2	922	
12 Oct	0	315	1	577			1	923	
13 Oct	0		1	578			1	924	
14 Oct	0						0	924	
15 Oct	0						0	924	Weir closed for the winter.

[a] Hatchery broodstock final total of 578 comprised of 327 for Trail Lake Hatchery and 68 for ADF&G hatcheries in Anchorage, plus 183 excess males.

[b] Weir harvest are fish not required for lake escapement and are donated to members of the public.





Note: A total of 924 coho salmon arrived at the weir in 2012. Of those 315 were passed into Bear Lake. The remaining fish were either used for hatchery broodstock (395), were excess males (183), or were donated (31).

Appendix C6.–Coho salmon passage past the Bear Creek weir, 2012.

Appendix C7.–Adult sockeye and coho salmon escapement, and Dolly Varden char and smolt outmigrations past the Bear Creek weir, 1992–2012.

	Upstream migration to Bear Lake								Downstream migration to Resurrection Bay			
	Sockeye				Coho							
Year	Weir harvest, (sold or donated)	Brood stock harvest	Spawning escapement	Total return at weir	Weir harvest, (sold or donated)	Brood stock harvest	Spawning escapement	Total return at weir	Sockeye (smolt)	Coho (smolt)	Dolly Varden (adult)	Comments
1992	0	0	1,925	1,925	1,234	689	1,132	3,055	133,787	112,852	2,186	Est. 800 coho below weir after closure.
1993	1,663	218	4,827	6,708	7,199	678	794	8,671	345,767	53,495	378	5,000 pink salmon below weir.
1994	8,047	1,370	7,335	16,752	4,927	1,038	475	6,440	253,886	54,422	627	Est. 300 coho below weir after closure.
1995	20,869	1,808	6,526	29,203	1,125	1,726	444	3,295	73,500	89,200	278	
1996	7,945	1,813	6,199	15,957	723	608	380	1,711	156,000	154,900	406	Est. 3,600 coho below weir after closure.
1997	10,051	720	7,225	17,996		598	276	874	276,000	114,100	630	Est. 750 coho below weir after closure.
1998	21,020	2,272	6,155	29,447	9,862	780	350	11,023	107,800	92,200	1,203	Coho reported below weir after closure.
1999	9,146	1,982	5,833	17,439	2,499	939	368	3,812	75,800	106,800	2,212	23 coho below weir after closure.
2000	1,670	3,984	7,844	13,716	5,390	719	597	6,765	175,000	70,900	2,195	Est. 200 coho below weir after closure.
2001	3,558	4,195	8,606	16,364	1,754	644	495	2,893	387,500	101,400	1,168	Est. 20 coho below weir after closure.
2002	2,722	4,226	8,278	15,227	1,745	864	875	3,484	107,200	94,200	1,168	
2003	2,776	3,735	9,498	16,010	2,065	1,021	395	3,506	1,326,476	208,120	231	
2004	0	3,725	8,198	11,923	1,224	876	572	2,672	123,213	73,397	158	
2005	31,905	3,122	10,285	45,312	1,536	808	546	2,947	1,420,428	65,448	51	
2006	30,651	4,060	8,338	43,049	681	892	516	2,089	1,962,415	49,980	95	
2007	7,250	4,265	8,575	20,090	0	727	386	1,113	1,347,874	78,891	64	
2008	3,706	4,172	9,264	17,142	403	697	368	1,467	308,459	63,943	60	
2009	32,515	2,954	10,364	45,833	0	529	535	1,064	241,106	54,829	44	181 coho below weir after closure.
2010	2,943	4,004	8,880	15,827	248	490	492	1,230	598,911	48,867	349	
2011	4,894	3,612	9,608	18,114	0	491	359	850	477,844	40,433	2,681	
Prev 10yr average	11,936	3,788	9,129	24,853	790	740	504	2,042	791,393	77,811	490	
2012	1,802	4,428	8,031	14,381	31	578	315	924	466,990	45,936	1,425	4,000 pink salmon below weir.

Source: Data from CIAA (1992–2012).

Appendix C8.–Sockeye salmon aerial survey counts from the Eastern District, 2012.

Location	Survey number	Survey date	Live count	Peak count
Aialik Lake and creek	1	7/16/12	70	
	2	7/25/12	680	
	3	8/3/12	2,140	
	4	8/10/12	100	2,140

Appendix C9.–Pink and chum salmon escapements using area under the curve estimation in the Eastern District, 2012.

Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Aialik Lake	pink	[t]start	8/3											
		1	8/3	8/3	0	0	0	0	0	0	0	0	0%	
		2	8/10	8/3	7	20	0	20	70	70	4	4	29%	
		[t]end	8/27		18				175	245	10	14	100%	20
Bear Lake Creek	pink	[t]start	7/28											
		1	8/15	7/28	18	582	0	582	5,093	5,093	291	291	7%	
		2	8/30	8/15	15	4,065	582	4,647	34,853	39,945	1,992	2,283	53%	
		[t]end	9/16		18				35,569	75,514	2,033	4,315	100%	4,065
Day Harbor	chum	[t]start	7/16											
		1	8/3	7/16	18	610	0	610	5,338	5,338	305	305	50%	
		[t]end	8/20		18				5,338	10,675	305	610	100%	610

Source: Bue et al. 1998.

Note: Final counts include fish observed in bays if no further harvest occurred.

[a] Fish days (A_b) = (Days between surveys * (prev. count + current count)) ÷ 2

[b] Escapement index = A_b / 17.5 day streamlife estimate.

[c] Area under the curve estimate equals the cumulative escapement index.

Appendix C10.–Unexpanded escapement indices and harvests by subdistrict in the Eastern District of Lower Cook Inlet, 2012.

Location	Harvest[a]				Escapement index[b]				Combined harvest and escapement index counts			
	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum
Aialik Bay Subdistrict (231-05)					2,140	0	20	0				
Harding Entrance Subdistrict (231-10)												
Outer Resurrection Bay Subdistrict (231-25)												
Resurrection Bay Subdistrict (231-30)	83,609	1,400	15	329	11,139	923	4,065[c]		94,748	2,323	4,080	329
Humpy Cove Subdistrict (231-40)												
Day Harbor Subdistrict (231-60)								600				
Eastern District total[d]	83,609	1,400	15	329	13,279	923	4,085	600	94,748	2,323	4,080	329

[a] Harvests include all commercial, sport derby and hatchery harvests.

[b] Unexpanded aerial or ground survey index counts, or weir counts.

[c] Pink salmon ground survey count of Bear Creek from weir to Seward Highway.

[d] Additional non-index streams where salmon were observed are also included. Therefore cumulative escapement values in this table are greater than escapement indices that historically contribute to sustainable escapement goal ranges as shown for index streams only.

Appendix C11.–Estimated sockeye and pink salmon escapements in thousands of fish for the major spawning systems in the Eastern District of the Lower Cook Inlet Area, 1970–2012.

	Pink salmon							Sockeye salmon		
Year	Aialik Lagoon	Bear Creek	Salmon Creek	Tonsina Creek	Thumb Cove	Humpy Cove	Total	Aialik Lake	Bear Lake [a,b]	Total
1970	–	–	–	–	–	–	–	–	5.8	5.8
1971	–	–	–	–	–	–	–	3.0	0.4	3.4
1972	–	0.5	–	–	–	–	0.5	0.6	0.7	1.3
1973	–	–	–	–	–	–	–	1.5	0.2	1.7
1974	0.1	4.9	–	1.4	1.1	0.6	8.1	2.2	0.1	2.3
1975	–	–	–	–	–	–	–	8.0	0	8.0
1976	0.4	10.0	16.9	5.7	2.0	1.4	36.4	8.0	0.6	8.6
1977	–	–	–	–	–	–	0.0	5.0	0	5.0
1978	–	7.8	11.0	1.5	2.0	0.9	23.2	3.0	0	3.0
1979	–	–	–	–	–	–	–	5.0	0	5.0
1980	–	13.3	15.5	0.7	1.2	5.7	36.4	6.6	1.5	8.1
1981	–	0.4	0.1	0.2	1.0	0.4	2.1	1.8	0.7	2.5
1982	5.0	7.9	21.0	7.5	7.9	4.0	53.3	22.4	0.5	22.9
1983	3.0	0.8	0.5	5.4	4.9	2.0	16.6	20.0	0.7	20.7
1984	4.0	7.7	10.2	6.0	4.2	2.5	34.6	22.0	0.5	22.5
1985	9.4	4.1	2.1	48.2	14.5	5.0	83.3	8.0	1.1	9.1
1986	6.0	14.0	8.3	11.2	4.0	0.9	44.4	7.6	0.8	8.4
1987	1.5	3.5	1.7	3.4	2.7	0.3	13.1	9.2	0.3	9.5
1988	0.7	0.2	0.1	0.1	0.3	0.4	1.8	13.0	0.1	13.1
1989	0.8	1.7	1.6	0.5	4.2	1.0	9.8	6.5	0.1	6.6
1990	–	4.4	–	1.2	–	3.8	9.4	5.7	1.1	6.8
1991	–	15.4	–	0.3	3.4	–	19.1	3.7	0.7	4.4
1992	–	2.3	–	[c]	0.4	–	2.7	2.5	1.9	4.3
1993	–	6.6	–	3.2	5.5	0.9	16.2	3.0	4.8	7.9
1994	–	34.8	–	7.0	10.8	2.2	54.8	7.3	7.3	14.7
1995	1.1	38.6	–	0.5	9.3	1.8	51.3	2.6	6.5	9.1
1996	–	8.0	–	0.4	9.5	3.4	21.3	3.5	6.2	9.7
1997	–	6.3	–	0.4	4.7	2.2	13.6	11.4	7.2	19.0
1998	0.4	13.2	–	2.3	21.0	1.2	38.1	4.9	6.2	11.1
1999	0.9	7.8	–	0.5	9.2	4.0	22.4	3.8	5.8	4.9
2000	–	35.6	–	6.6	8.5	1.7	52.4	4.3	7.8	12.8
2001	–	3.0	–	2.8	3.1	0.3	9.2	5.1	8.6	13.7
2002	–	2.7	–	6.9	3.7	1.8	15.1	6.1	8.3	14.5
2003	–	4.4	–	5.2	5.1	2.6	17.3	5.4	9.5	14.9
2004	–	1.2	–	3.5	4.3	1.0	10.0	10.1	8.2	18.2
2005	0.8	34.5	–	9.9	8.7	14.6	68.5	5.3	10.3	15.6
2006	–	9.0	–	6.5	5.2	1.9	22.6	4.8	8.3	11.8
2007	–	–	–	–	–	–	–	5.4	8.6	12.4
2008	–	–	–	–	–	–	–	4.2	9.3	12.8
2009	–	–	–	–	–	–	–	3.1	10.4	12.6
2010	–	–	–	–	–	–	–	5.3	8.9	13.9
2011	–	–	–	–	–	–	–	3.5	9.6	12.9
10-yr avg.	0.8	10.4	–	6.4	5.4	4.4	26.7	5.3	9.1	13.9
2012	0.02	4.1	–	–	–	–	–	2.1	8.0	13.2

[a] Weir counts.

[b] Beginning in 1994, Bear Lake escapement figures are derived from total weir count minus number of fish collected for hatchery broodstock.

APPENDIX D: KAMISHAK BAY DISTRICT

Appendix D1.–Kamishak Bay District commercial salmon harvest by period, 2012.

			Permits		Chinook		Sockeye		Coho		Pink		Chum	
Period [a]	Date	Hours	Fished	Landings	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1 [a]	06/01–06/03	66	0	0	0	0	0	0	0	0	0	0	0	0
2 [a]	06/04–06/10	160	0	0	0	0	0	0	0	0	0	0	0	0
3 [a]	06/11–06/17	160	0	0	0	0	0	0	0	0	0	0	0	0
4 [a,b]	06/18–06/24	160	0	0	0	0	0	0	0	0	0	0	0	0
5 [a,b]	06/25–07/01	160	0	0	0	0	0	0	0	0	0	0	0	0
6 [a,b,c,d]	07/02–07/08	160	5	24	0	0	53,929	253,688	0	0	0	0	0	0
7 [a,b,c]	07/09–07/15	160	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]	[e]
8 [a,b,e]	07/16–07/22	160	5	9	0	0	0	0	0	0	61	244	2,425	20,252
9 [a,b,f]	07/23–07/29	160	0	0	0	0	0	0	0	0	0	0	0	0
10 [a,f,g]	07/30–08/05	160	0	0	0	0	0	0	0	0	0	0	0	0
11 [a,f,g]	08/06–08/12	160	0	0	0	0	0	0	0	0	0	0	0	0
12 [a,f,g,h]	08/13–08/19	160	0	0	0	0	0	0	0	0	0	0	0	0
13 [a,f,g,h]	08/20–08/26	160	0	0	0	0	0	0	0	0	0	0	0	0
14 [a,f,g,h]	08/27–09/02	160	0	0	0	0	0	0	0	0	0	0	0	0
15 [a,f,g,h]	09/03–09/09	160	0	0	0	0	0	0	0	0	0	0	0	0
16 [a,f,g]	09/10–09/16	160	0	0	0	0	0	0	0	0	0	0	0	0
Total			6	34	0	0	55,255	258,465	0	0	61	244	2,425	20,252
Average weight								4.68				4.00		8.35

Note: Unless otherwise noted, all Kamishak Bay Subdistricts were open to commercial harvest from June 1, 2012 to September 16, 2012 with regular closed waters in effect.

[a] Waters of McNeil River and Paint River Subdistricts closed to commercial harvest for the entire the 2012 season.

[b] Waters of Chenik Subdistrict closed to commercial harvest June 18–July 4 and July 9–29.

[c] Waters of Bruin Bay Subdistrict closed to commercial harvest July 2–15.

[d] Confidential data. Fewer than 3 permits reporting.

[d] Waters of Chenik Subdistrict, including waters of Chenik Lagoon, were open to commercial harvest for 16 hour daily periods July 5–8.

[e] Confidential data. Fewer than 3 permits reporting.

[f] Select portions of Bruin Bay Subdistrict open to commercial harvest on July 16 for the remainder of the season.

[g] Chenik Subdistrict open to commercial harvest July 30 for the remainder of the season.

[h] Anadromous stream closures suspended for Bruin River August 13 to September 3.

Appendix D2.–Total commercial common property harvest by species in the Kamishak Bay District 1959–2012.

Year	Permits	Landings	Chinook	Sockeye	Coho	Pink	Chum
1959	–	–	0	1,549	43	5,325	23,574
1960	–	–	11	768	28	11,563	44,328
1961	–	–	0	1	14	6,019	12,465
1962	–	–	0	20	11	219	43,404
1963	–	–	2	4	97	82,314	13,892
1964	–	–	5	1,979	115	20,719	42,280
1965	–	–	0	808	122	3,452	3,175
1966	–	–	1	21	247	2,945	12,688
1967	–	–	1	182	74	17,340	24,221
1968	–	–	0	492	101	198,253	49,461
1969	–	–	2	10,723	121	80,157	53,193
1970	–	–	0	2,846	218	22,500	95,841
1971	–	–	0	3	121	32,094	26,327
1972	–	–	0	47	31	342	26,374
1973	–	–	0	1	28	12,568	35,584
1974	–	–	0	0	2,915	48	4,554
1975	–	–	0	29	3,041	9,432	4,868
1976	–	–	1	3,988	1,111	1,112	48,848
1977	–	–	1	7,425	105	6,308	65,659
1978	–	–	0	4,619	1,584	982	48,669
1979	–	–	9	1,778	1,116	58,484	28,711
1980	–	–	0	3,877	2,495	101,864	35,921
1981	–	–	1	4,972	1,845	66,097	73,501
1982	–	–	11	18,014	38,685	43,871	108,946
1983	–	–	1	11,207	7,138	1,405	142,901
1984	–	–	2	24,642	13,230	137,133	70,595
1985	10	72	6	78,076	2,024	194	8,139
1986	25	386	14	146,496	9,935	423,774	61,670
1987	32	439	7	123,663	8,079	72,686	110,565
1988	38	634	33	186,011	4,471	64,468	220,579
1989	20	144	3	46,395	4	256,669	7,809
1990	30	318	12	96,397	26	2,448	3,597
1991	33	479	17	127,579	2,337	47,478	7,849
1992	23	232	39	60,078	1,488	2,594	20,051
1993	14	89	4	59,745	3	4,205	600
1994	8	17	0	18,509	1,897	33	14
1995	7	27	2	31,077	6,084	169,039	10,300
1996	[a]	[a]	[a]	[a]	[a]	[a]	[a]
1997	3	6	0	5,608	0	0	3
1998	4	4	0	8,112	0	414	20
1999	6	8	0	29,409	0	325	23
2000	10	41	1	10,245	7	6,173	66,069
2001	7	40	2	9,972	9	131	84,766
2002	5	53	0	1,429	52	438,352	34,604
2003	[a]	[a]	[a]	[a]	[a]	[a]	[a]
2004	6	46	0	35,285	5,367	12,969	177,395
2005	8	37	0	50,018	92	5,787	83,943
2006	5	34	0	38,267	24,269	77,833	56,494
2007	4	24	0	169,509	4	4,959	37
2008	11	44	2	171,924	20	26,397	73,209
2009	9	81	0	65,763	0	132,414	36,574
2010	9	54	10	5,612	573	2,432	70,782
2011	5	38	0	99,288	0	1,050	3,850
Prev. 10-yr avg	6	42	1	64,961	3,038	70,776	56,663
2012	6	34	0	55,255	0	61	2,425

Source: ADF&G fish ticket database.

[a] Confidential data. Fewer than 3 permits reporting.

Appendix D3.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement past the video monitoring site at Chenik Lake, 2012.

	Actual		Apportioned sustainable escapement goals				
			Projected minimum		Projected maximum		
Date	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Comments
22 Jun	0	0	247	908	990	3,630	Camera installed on 6/22.
23 Jun	0	0	137	1,044	547	4,177	
24 Jun	116	116	64	1,109	257	4,434	
25 Jun	14	130	73	1,182	293	4,727	
26 Jun	0	130	99	1,281	398	5,125	
27 Jun	141	271	222	1,503	887	6,012	
28 Jun	0	271	98	1,601	392	6,403	
29 Jun	0	271	165	1,766	661	7,064	
30 Jun	598	869	166	1,932	663	7,727	
01 Jul	1,154	2,023	228	2,160	911	8,638	
02 Jul	3,728	5,751	162	2,321	646	9,284	
03 Jul	965	6,716	54	2,375	217	9,501	
04 Jul	464	7,180	133	2,508	531	10,033	
05 Jul	378	7,558	56	2,565	226	10,258	
06 Jul	268	7,826	68	2,632	270	10,529	
07 Jul	1,028	8,854	25	2,657	100	10,629	
08 Jul	0	8,854	23	2,680	93	10,722	
09 Jul	0	8,854	73	2,753	291	11,013	
10 Jul	0	8,854	87	2,840	347	11,360	
11 Jul	0	8,854	53	2,893	211	11,571	
12 Jul	1	8,855	27	2,920	110	11,681	
13 Jul	0	8,855	13	2,933	53	11,734	
14 Jul	0	8,855	8	2,941	32	11,765	
15 Jul	0	8,855	9	2,950	36	11,802	
16 Jul	3	8,858	98	3,048	392	12,194	
17 Jul	0	8,858	23	3,071	92	12,286	
18 Jul	371	9,229	69	3,141	277	12,563	
19 Jul	1,087	10,316	48	3,189	193	12,755	
20 Jul	1,265	11,581	78	3,267	311	13,067	
21 Jul	51	11,632	21	3,288	84	13,151	
22 Jul	416	12,048	32	3,320	129	13,280	
23 Jul	413	12,461	21	3,341	84	13,364	
24 Jul	17	12,478	24	3,365	95	13,459	
25 Jul	1,111	13,589	15	3,379	58	13,518	
26 Jul	419	14,008	15	3,394	59	13,577	
27 Jul	1,046	15,054	19	3,413	76	13,653	
28 Jul	651	15,705	7	3,420	29	13,682	
29 Jul	662	16,367	46	3,467	185	13,867	
30 Jul	61	16,428	27	3,494	108	13,975	
31 Jul	10	16,438	5	3,498	18	13,993	
01 Aug	1	16,439	1	3,499	2	13,995	
02 Aug	18	16,457	0	3,499	1	13,996	
03 Aug	3	16,460	1	3,500	2	13,999	
04 Aug	3	16,463	0	3,500	0	13,999	
05 Aug	3	16,466	0	3,500	0	13,999	
06 Aug	0	16,466	0	3,500	0	13,999	
07 Aug	39	16,505	0	3,500	0	13,999	
08 Aug	0	16,505	0	3,500	0	13,999	Camera pulled for season, 8/8.

Note: Anticipated escapement derived from run timing and Chenik Lake sockeye salmon SEG (3,500–14,000 fish).

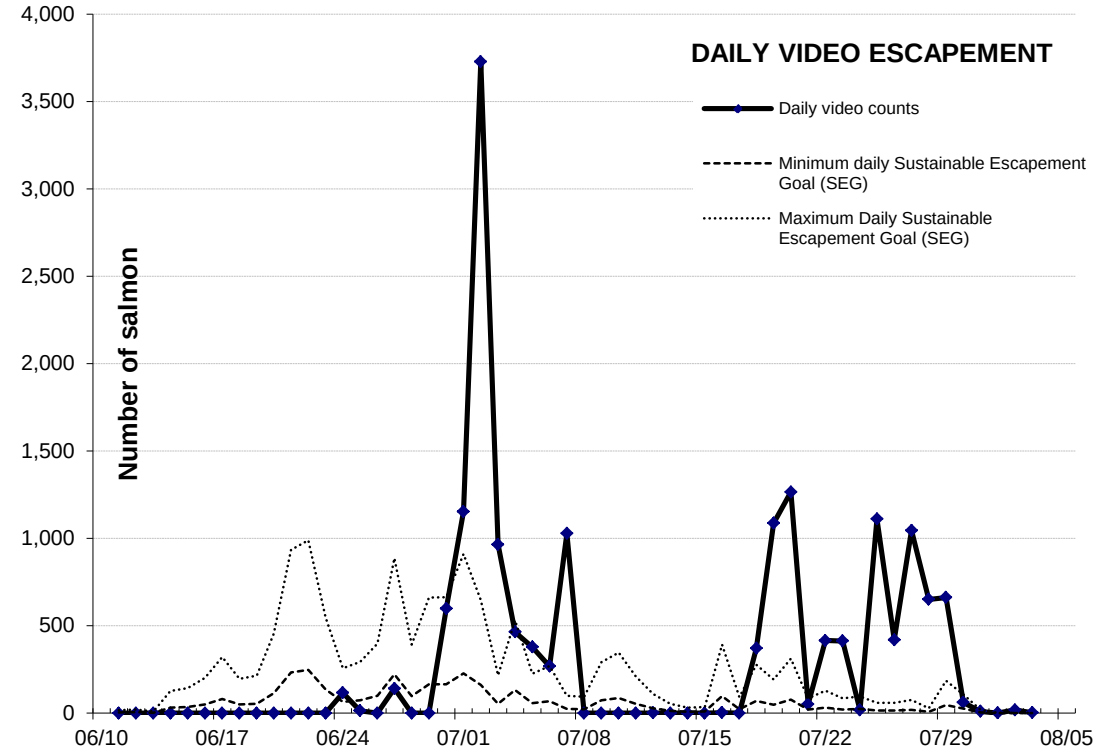
Appendix D4.–Anticipated daily and cumulative sockeye salmon escapement versus actual escapement past the video monitoring site at Mikfik Lake, 2012.

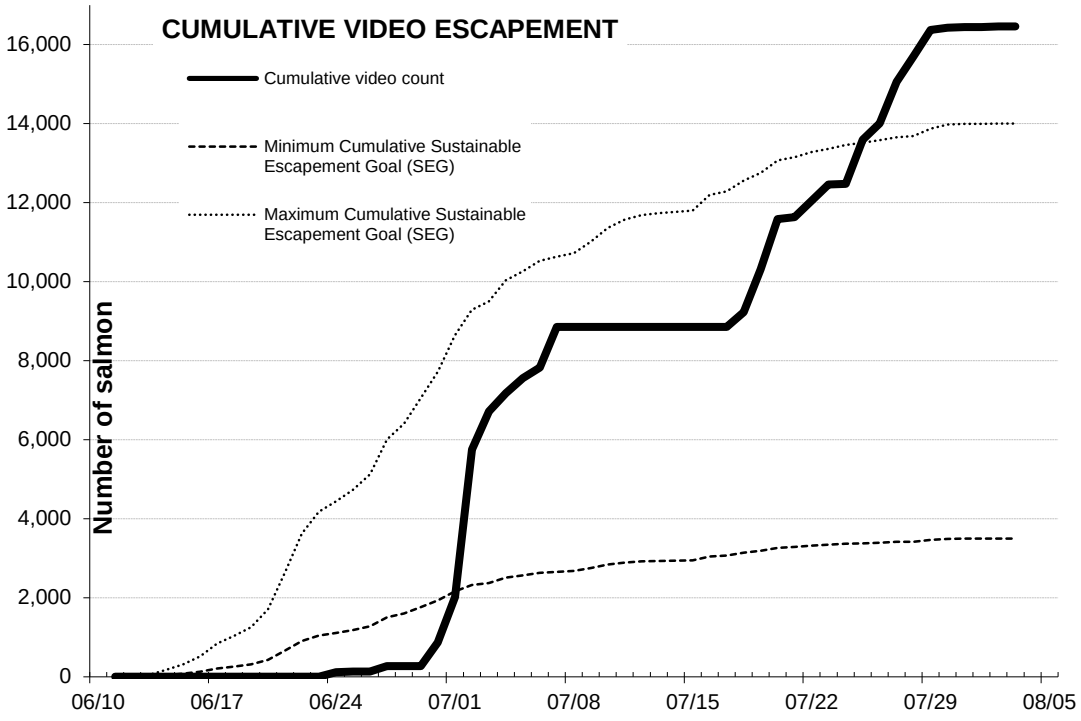
	Actual		Apportioned sustainable escapement goal: Projected minimum		Apportioned sustainable escapement goal: Projected maximum		
Date	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Comments
11 Jun	0	0	0	22	0	42	Camera installed, 6/11.
12 Jun	3	3	1	22	1	43	
13 Jun	3	6	990	1,013	1,910	1,953	
14 Jun	2	8	710	1,723	1,370	3,323	
15 Jun	56	64	169	1,892	325	3,648	
16 Jun	3	67	0	1,892	0	3,648	
17 Jun	322	389	117	2,009	226	3,874	
18 Jun	83	472	293	2,301	564	4,439	
19 Jun	0	472	1	2,302	1	4,440	
20 Jun	0	472	471	2,773	907	5,347	
21 Jun	17	489	1,349	4,122	2,602	7,950	
22 Jun	23	512	907	5,029	1,749	9,699	
23 Jun	0	512	346	5,375	667	10,366	
24 Jun	0	512	271	5,646	523	10,889	
25 Jun	0	512	268	5,914	517	11,406	
26 Jun	106	618	29	5,943	55	11,461	
27 Jun	512	1,130	35	5,978	68	11,529	
28 Jun	197	1,327	0	5,978	0	11,529	
29 Jun	101	1,428	5	5,984	10	11,540	
30 Jun	0	1,428	0	5,984	0	11,540	
01 Jul	2	1,430	0	5,984	0	11,540	
02 Jul	0	1,430	3	5,987	6	11,545	
03 Jul	0	1,430	2	5,989	5	11,550	
04 Jul	5	1,435	0	5,989	0	11,550	
05 Jul	27	1,462	0	5,989	0	11,550	
06 Jul	607	2,069	2	5,991	4	11,554	
07 Jul	248	2,317	12	6,003	23	11,577	
08 Jul	49	2,366	159	6,162	307	11,884	
09 Jul	1	2,367	5	6,167	10	11,894	
10 Jul	6	2,373	0	6,167	0	11,894	
11 Jul	0	2,373	0	6,167	0	11,894	
12 Jul	0	2,373	11	6,178	21	11,915	
13 Jul	13	2,386	60	6,238	115	12,030	

-continued-

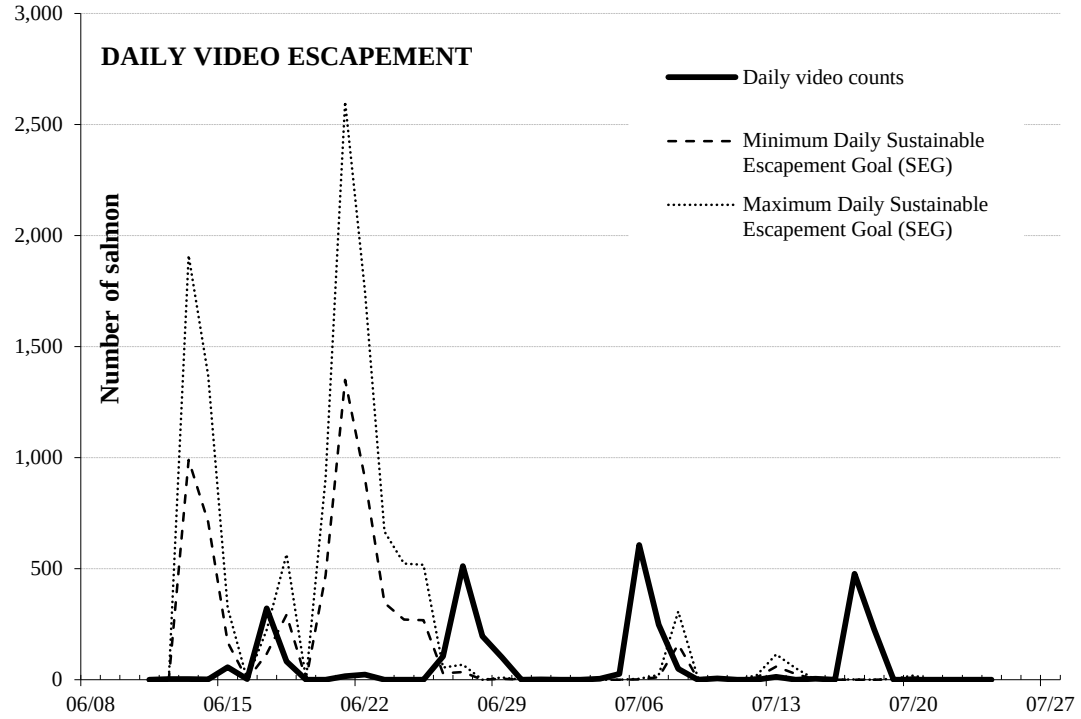
	Actual		Apportioned sustainable escapement goal: Projected minimum		Apportioned sustainable escapement goal: Projected maximum		
Date	Daily	Cumulative	Daily	Cumulative	Daily	Cumulative	Comments
14 Jul	0	2,386	27	6,265	52	12,082	
15 Jul	5	2,391	0	6,265	0	12,082	
16 Jul	0	2,391	0	6,265	1	12,083	
17 Jul	477	2,868	1	6,266	2	12,084	
18 Jul	228	3,096	0	6,266	1	12,085	
19 Jul	0	3,096	2	6,268	4	12,089	
20 Jul	0	3,096	10	6,279	20	12,109	
21 Jul	0	3,096	1	6,279	1	12,110	
22 Jul	0	3,096	1	6,280	1	12,111	
23 Jul	0	3,096	0	6,280	1	12,112	
24 Jul	0	3,096	0	6,280	0	12,112	
25 Jul	0	3,096	0	6,280	0	12,112	
26 Jul	0	3,096	0	6,280	1	12,112	
27 Jul	0	3,096	0	6,280	0	12,112	
28 Jul	0	3,096	2	6,282	3	12,116	
29 Jul	0	3,096	0	6,282	0	12,116	
30 Jul	33	3,129	5	6,287	9	12,125	
31 Jul	0	3,129	8	6,295	16	12,141	
01 Aug	0	3,129	0	6,295	0	12,141	
02 Aug	0	3,129	0	6,295	1	12,141	
03 Aug	0	3,129	1	6,296	2	12,143	
04 Aug	0	3,129	1	6,297	1	12,144	
05 Aug	0	3,129	2	6,299	3	12,148	
06 Aug	0	3,129	1	6,300	2	12,150	
07 Aug	1	3,130	0	6,300	0	12,150	
08 Aug	1	3,131	0	6,300	0	12,150	
09 Aug	0	3,131	0	6,300	0	12,150	Camera pulled for season, 8/9.

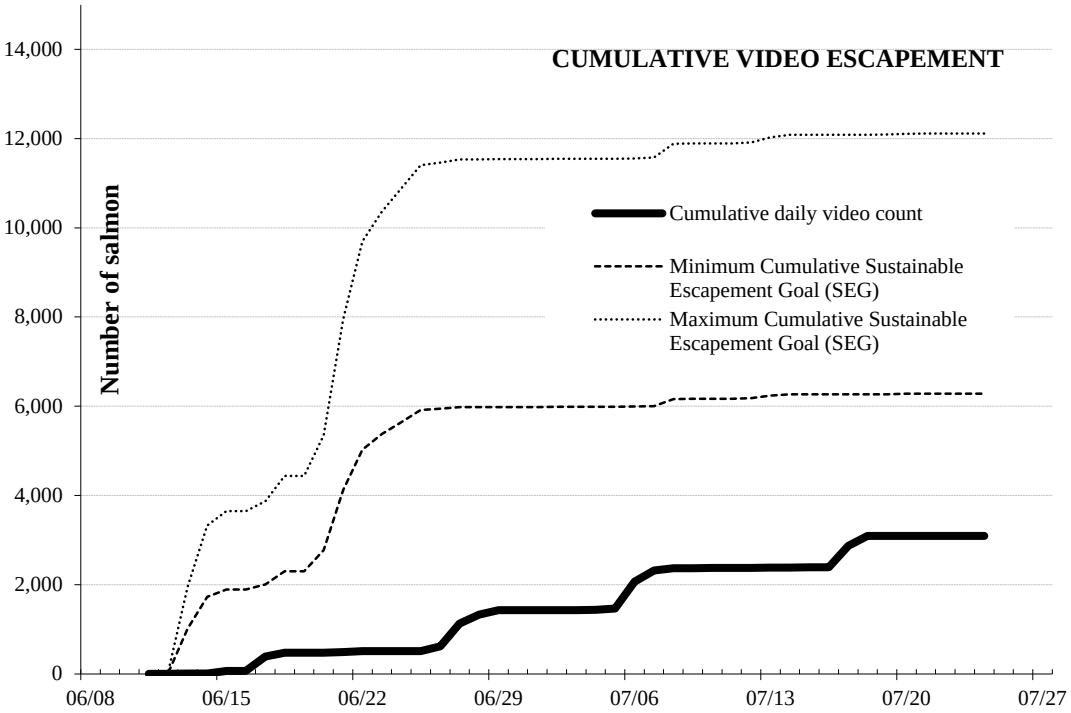
Note: Anticipated escapement derived from run timing and Mikfik Lake sockeye salmon sustainable escapement goal (6,300–12,150 fish).





Appendix D5.–Minimum and maximum anticipated cumulative and daily escapement of sockeye salmon versus actual escapement past the video monitoring station at Chenik Lake, 2012.





Appendix D6.–Minimum and maximum anticipated cumulative and daily escapement of sockeye salmon versus actual escapement past the Mikfik Lake video monitoring station, 2012.

Appendix D7.–Sockeye salmon escapement into Chenik Lake and Mikfik Lake, 1927–2012.

Year	Chenik	Mikfik
1927	7,069 [a]	
1928	31,007 [a]	
1929	30,440 [a]	
1930	23,638 [a]	
1931	33,514 [a]	
1932	53,012 [a]	
1933	39,222 [a]	
1934	35,778 [a]	
1935	16,041 [a]	
1936	19,349 [a]	
1937	8,256 [a]	
1938	3,804 [a]	
1939	4,076 [a]	
…	(No weir from 1940- 1991)	
1992	9,269 [a]	7800 [b]
1993	4,000 [a]	6400 [b]
1994	808 [a]	9500 [b]
1995	1,086 [a]	10,100 [b]
1996	2,990 [a]	10,500 [b]
1997	2,338 [a]	8,500 [b]
1998	1,880 [b]	12,600 [b]
1999	2,850 [b]	15,700 [b]
2000	4,800 [b]	10,386 [d]
2001	250 [b]	5,400 [b]
2002	4,650 [b]	16,700 [b]
2003	13,825 [b]	8,009 [d]
2004	17,000 [b]	14,829 [d]
2005	14,507 [c]	6,499 [d]
2006	13,868 [c]	14,983 [d]
2007	18,288 [c]	10,975 [d]
2008	11,284 [c]	9,104 [d]
2009	15,264 [d]	20,965 [d]
2010	17,312 [d]	11,300 [b]
2011	10,330 [d]	345 [b]
Previous 10-yr average	13,633	11,371
2012	16,505 [d]	3,031 [d]

[a] Escapement derived from weir counts.

[b] Escapement derived from aerial surveys.

[c] Escapement derived from a combination of weir, video counts, and/or aerial counts.

[d] Escapement derived from video counts.

Appendix D8.–Pink and chum salmon escapements using area under the curve estimation in the Kamishak Bay District, 2012.

Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Amakdedori	pink	[t]start	7/13											
Creek		1	7/31	7/13	17.5	700	0	700	6,125	6,125	350	350	13%	
		2	8/8	7/31	8	2,100	700	2,800	11,200	17,325	640	990	38%	
		3	8/11	8/8	3	3,040	2,100	5,140	7,710	25,035	441	1,431	54%	
		4	8/17	8/11	6	1,410	3,040	4,450	13,350	38,385	763	2,193	83%	
		5	8/25	8/17	8	160	1,410	1,570	6,280	44,665	359	2,552	97%	
		[t]end	9/11		17.5				1,400	46,065	80	2,632	100%	3,040
Big	chum	[t]start	7/9											
Kamishak		1	7/27	7/9	17.5	2,370	0	2,370	20,738	20,738	1,185	1,185	12%	
River		2	8/8	7/27	12	2,200	2,370	4,570	27,420	48,158	1,567	2,752	27%	
		3	8/11	8/8	3	12,400	2,200	14,600	21,900	70,058	1,251	4,003	39%	
		[t]end	8/28		17.5				108,500	178,558	6,200	10,203	100%	12,400
Big	pink	[t]start	7/21											
Kamishak		1	8/8	7/21	17.5	2,230	0	2,230	19,513	19,513	1,115	1,115	41%	
River		2	8/11	8/8	3	2,400	2,230	4,630	6,945	26,458	397	1,512	56%	
		[t]end	8/28		17.5				21,000	47,458	1,200	2,712	100%	2,400
Brown's	chum	[t]start	7/24											
Peak Creek		1	8/11	7/24	17.5	492	0	492	4,305	4,305	246	246	59%	
		2	8/17	8/11	6	130	492	622	1,866	6,171	107	353	84%	
		[t]end	9/3		17.5				1,138	7,309	65	418	100%	492

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Brown's	pink	[t]start	7/9											
Peak Creek		1	7/27	7/9	17.5	210	0	210	1,838	1,838	105	105	8%	
		2	7/31	7/27	4	50	210	260	520	2,358	30	135	11%	
		3	8/8	7/31	8	2,800	50	2,850	11,400	13,758	651	786	64%	
		4	8/11	8/8	3	300	2,800	3,100	4,650	18,408	266	1,052	85%	
		5	8/17	8/11	6	150	300	450	1,350	19,758	77	1,129	91%	
		6	8/25	8/17	8	100	150	250	1,000	20,758	57	1,186	96%	
		[t]end	9/11		17.5				875	21,633	50	1,236	100%	2,800
Bruin River	chum	[t]start	6/18											
		1	7/6	6/18	17.5	60	0	60	525	525	30	30	0%	
		2	7/10	7/6	4	0	60	60	120	645	7	37	0%	
		3	7/18	7/10	8	4,381	0	4,381	17,524	18,169	1,001	1,038	6%	
		4	7/27	7/18	9	7,820	4,381	12,201	54,905	73,074	3,137	4,176	25%	
		5	8/8	7/27	12	3,620	7,820	11,440	68,640	141,714	3,922	8,098	48%	
		6	8/11	8/8	3	5,870	3,620	9,490	14,235	155,949	813	8,911	53%	
		7	8/17	8/11	6	145	5,870	6,015	18,045	173,994	1,031	9,942	59%	
		8	8/25	8/17	8	9,360	145	9,505	38,020	212,014	2,173	12,115	72%	
		tend	9/11		17.5				81,900	293,914	4,680	16,795	100%	9,360
Bruin River	pink	[t]start	7/9											
		1	7/27	7/9	17.5	700	0	700	6,125	6,125	350	350	1%	
		2	7/31	7/27	4	1,920	700	2,620	5,240	11,365	299	649	3%	
		3	8/8	7/31	8	30,620	1,920	32,540	130,160	141,525	7,438	8,087	33%	
		4	8/11	8/8	3	31,800	30,620	62,420	93,630	235,155	5,350	13,437	55%	
		5	8/17	8/11	6	8,710	31,800	40,510	121,530	356,685	6,945	20,382	84%	
		6	8/25	8/17	8	2,620	8,710	11,330	45,320	402,005	2,590	22,972	95%	
		[t]end	9/11		17.5				22,925	424,930	1,310	24,282	100%	31,800

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Cottonwood	chum	[t]start	7/9											
Creek		1	7/27	7/9	17.5	340	0	340	2,975	2,975	170	170	6%	
		2	8/8	7/27	12	2,300	340	2,640	15,840	18,815	905	1,075	39%	
		3	8/11	8/8	3	2,110	2,300	4,410	6,615	25,430	378	1,453	52%	
		4	8/17	8/11	6	411	2,110	2,521	7,563	32,993	432	1,885	68%	
		5	8/25	8/17	8	1,100	411	1,511	6,044	39,037	345	2,231	80%	
		[t]end	9/11		17.5				9,625	48,662	550	2,781	100%	2,300
Cottonwood	pink	[t]start	7/13											
Creek		1	7/31	7/13	17.5	150	0	150	1,313	1,313	75	75	5%	
		2	8/8	7/31	8	1,100	150	1,250	5,000	6,313	286	361	25%	
		3	8/17	8/8	9	400	1,100	1,500	6,750	13,063	386	746	53%	
		4	8/25	8/17	8	800	400	1,200	4,800	17,863	274	1,021	72%	
		[t]end	9/11		17.5				7,000	24,863	400	1,421	100%	1,100
Douglas River	pink	[t]start	7/21											
		1	8/8	7/21	17.5	1,330	0	1,330	11,638	11,638	665	665	47%	
		2	8/25	8/8	17	100	1,330	1,430	12,155	23,793	695	1,360	96%	
		[t]end	9/11		17.5				875	24,668	50	1,410	100%	1,330
Douglas	chum	[t]start	6/30											
Beach River		1	7/18	6/30	17.5	2	0	2	18	18	1	1	0%	
		2	7/27	7/18	9	260	2	262	1,179	1,197	67	68	3%	
		3	8/8	7/27	12	1,050	260	1,310	7,860	9,057	449	518	21%	
		4	8/11	8/8	3	1,250	1,050	2,300	3,450	12,507	197	715	29%	
		5	8/25	8/11	14	1,420	1,250	2,670	18,690	31,197	1,068	1,783	72%	
		[t]end	9/11		17.5				12,425	43,622	710	2,493	100%	1,420

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Douglas	chum	[t]start	6/30											
Reef River		1	7/18	6/30	17.5	11	0	11	96	96	6	6	0%	
		2	7/27	7/18	9	110	11	121	545	641	31	37	2%	
		3	8/8	7/27	12	531	110	641	3,846	4,487	220	256	14%	
		4	8/25	8/8	17	1,340	531	1,871	15,904	20,390	909	1,165	63%	
		[t]end	9/11		17.5				11,725	32,115	670	1,835	100%	1,340
Douglas	pink	[t]start	7/21											
Reef River		1	8/8	7/21	17.5	1,310	0	1,310	11,463	11,463	655	655	50%	
		[t]end	8/25		17.5				11,463	22,925	655	1,310	100%	1,310
Iniskin River	chum	[t]start	7/24											
		1	8/11	7/24	17.5	1,780	0	1,780	15,575	15,575	890	890	29%	
		2	8/17	8/11	6	991	1,780	2,771	8,313	23,888	475	1,365	45%	
		3	8/25	8/17	8	2,000	991	2,991	11,964	35,852	684	2,049	67%	
		[t]end	9/11		17.5				17,500	53,352	1,000	3,049	100%	2,000
Little	chum	[t]start	7/10											
Kamishak		1	7/10	7/10	0	0	0	0	0	0	0	0	0%	
River		2	7/18	7/10	8	812	0	812	3,248	3,248	186	186	1%	
		3	7/27	7/18	9	5,521	812	6,333	28,499	31,747	1,628	1,814	7%	
		4	8/8	7/27	12	9,200	5,521	14,721	88,326	120,073	5,047	6,861	25%	
		5	8/11	8/8	3	30,250	9,200	39,450	59,175	179,248	3,381	10,243	37%	
		6	8/25	8/11	14	6,050	30,250	36,300	254,100	433,348	14,520	24,763	89%	
		[t]end	9/11		17.5				52,938	486,285	3,025	27,788	100%	30,250

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Little	pink	[t]start	7/21											
Kamishak		1	8/8	7/21	17.5	9,330	0	9,330	81,638	81,638	4,665	4,665	56%	
River		2	8/11	8/8	3	5,600	9,330	14,930	22,395	104,033	1,280	5,945	71%	
		3	8/25	8/11	14	200	5,600	5,800	40,600	144,633	2,320	8,265	99%	
		[t]end	9/11		17.5				1,750	146,383	100	8,365	100%	9,330
McNeil River	chum	[t]start	6/20											
		1	6/20	6/20	0	0	0	0	0	0	0	0	0%	
		2	6/27	6/20	7	460	0	460	1,610	1,610	117	117	1%	
		3	7/1	6/27	4	860	460	1,320	2,640	4,250	191	308	3%	
		4	7/3	7/1	2	2,200	860	3,060	3,060	7,310	222	530	6%	
		5	7/6	7/3	3	80	2,200	2,280	3,420	10,730	248	778	8%	
		6	7/10	7/6	4	697	80	777	1,554	12,284	113	890	9%	
		7	7/18	7/10	8	1,802	697	2,499	9,996	22,280	724	1,614	17%	
		8	7/27	7/18	9	4,484	1,802	6,286	28,287	50,567	2,050	3,664	39%	
		9	8/8	7/27	12	4,460	4,484	8,944	53,664	104,231	3,889	7,553	80%	
		[t]end	8/14						30,774	135,005	2,230	9,783	100%	4,484
McNeil River	pink	[t]start	8/7											
		1	8/25	8/7	17.5	90	0	90	788	788	45	45	50%	
		[t]end	9/11		17.5				788	1,575	45	90	100%	90
North Head	chum	[t]start	7/21											
Creek		1	8/8	7/21	17.5	100	0	100	875	875	50	50	11%	
		2	8/11	8/8	3	690	100	790	1,185	2,060	68	118	27%	
		3	8/17	8/11	6	307	690	997	2,991	5,051	171	289	65%	
		[t]end	9/3		17.5				2,686	7,737	154	442	100%	690

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
North Head	pink	[t]start	7/21											
Creek		1	8/8	7/21	17.5	210	0	210	1,838	1,838	105	105	45%	
		2	8/17	8/8	9	100	210	310	1,395	3,233	80	185	79%	
		[t]end	9/3		17.5				875	4,108	50	235	100%	210
Sugarloaf	chum	[t]start	7/24											
Creek		1	8/11	7/24	17.5	460	0	460	4,025	4,025	230	230	51%	
		2	8/17	8/11	6	80	460	540	1,620	5,645	93	323	72%	
		3	8/25	8/17	8	150	80	230	920	6,565	53	376	83%	
		[t]end	9/11		17.5				1,313	7,878	75	451	100%	460
Sugarloaf	pink	[t]start	7/24											
Creek		1	8/11	7/24	17.5	110	0	110	963	963	55	55	68%	
		2	8/17	8/11	6	10	110	120	360	1,323	21	76	94%	
		[t]end	9/3		17.5				88	1,410	5	81	100%	110
Sunday	chum	[t]start	7/10											
Creek		1	7/10	7/10	0	0	0	0	0	0	0	0	0%	
		2	7/18	7/10	8	100	0	100	400	400	23	23	4%	
		3	7/31	7/18	13	0	100	100	650	1,050	37	60	10%	
		4	8/8	7/31	8	300	0	300	1,200	2,250	69	129	22%	
		5	8/11	8/8	3	1,290	300	1,590	2,385	4,635	136	265	45%	
		6	8/17	8/11	6	260	1,290	1,550	4,650	9,285	266	531	90%	
		7	8/25	8/17	8	0	260	260	1,040	10,325	59	590	100%	
		[t]end	8/25		0				0	10,325	0	590	100%	1,290

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Location	Species	Survey number	Survey date (t_i)	Previous survey date (t_i-1)	Days between surveys (t_i-t_{i-1})	Current live count, (c_i)	Previous live count (c_{i-1})	Previous + current live count (c_i+c_{i-1})	Fish days[a], (A_b)	Accum. fish days, (A_b)	Escape. Index[b]	Accum. Escape. Index[c]	Accum. Percent Escape.	Peak count
Sunday	pink	tstart	7/9											
Creek		1	7/27	7/9	17.5	440	0	440	3,850	3,850	220	220	16%	
		2	7/31	7/27	4	690	440	1,130	2,260	6,110	129	349	26%	
		3	8/8	7/31	8	1,321	690	2,011	8,044	14,154	460	809	60%	
		4	8/11	8/8	3	100	1,321	1,421	2,132	16,286	122	931	69%	
		5	8/17	8/11	6	180	100	280	840	17,126	48	979	73%	
		6	8/25	8/17	8	450	180	630	2,520	19,646	144	1,123	83%	
		tend	9/11		17.5				3,938	23,583	225	1,348	100%	1,321
Ursus	chum	tstart	7/21											
Lagoon		1	8/8	7/21	17.5	720	0	720	6,300	6,300	360	360	21%	
Creeks		2	8/11	8/8	3	2,840	720	3,560	5,340	11,640	305	665	39%	
		3	8/17	8/11	6	922	2,840	3,762	11,286	22,926	645	1,310	78%	
		4	8/25	8/17	8	230	922	1,152	4,608	27,534	263	1,573	93%	
		tend	9/11		17.5				2,013	29,547	115	1,688	100%	2,840
Ursus	pink	tstart	7/27											
Lagoon		1	7/27	7/27	0	0	0	0	0	0	0	0	0%	
Creeks		2	8/11	7/27	15	300	0	300	2,250	2,250	129	129	14%	
		3	8/25	8/11	14	760	300	1,060	7,420	9,670	424	553	59%	
		tend	9/11		17.5				6,650	16,320	380	933	100%	760

Source: Bue et al. 1998.

[a] Fish days (A_b) = (Days between surveys x (prev. count + current count)) ÷ 2.

[b] Escapement index = Ab / 17.5 day streamlife estimate (except McNeil River chum calculations use a 13.8 day streamlife estimate)

[c] The McNeil River chum salmon AUC index is not the final escapement index. After applying a run-timing expansion factor, the final escapement index was 9,783 under the curve estimate equals the cumulative escapement index.

Appendix D9.–Sockeye salmon aerial survey counts from the Kamishak Bay District, 2012.

Location	Survey number	Survey date	Live count	Peak count
Amakdedori Creek	1	06/11/12	0	
	2	06/27/12	0	
	3	07/03/12	10	
	4	07/06/12	270	
	5	07/18/12	480	
	6	07/27/12	650	
	7	07/31/12	480	
	8	08/08/12	390	
	9	08/11/12	770	
	10	08/17/12	353	
	11	08/25/12	240	770
Big Kamishak River	1	07/27/12	852	
	2	08/08/12	30	
	3	08/11/12	260	852
Bruin River	1	08/11/12	20	
	2	08/25/12	10	20
Douglas River	1	07/27/12	1,420	
	2	08/08/12	1,080	
	3	08/11/12	130	
	4	08/25/12	1,850	1,850
Little Kamishak River	1	08/25/12	270	270
Mikfik Lake [a]	1	06/02/12	0	
	2	06/05/12	2	
	3	06/11/12	1,570	
	4	06/20/12	320	
	5	06/27/12	2,520	
	6	07/01/12	384	
	7	07/03/12	360	
	8	07/06/12	2,200	
	9	07/10/12	521	
	10	07/18/12	140	2,520
North Head Creek	1	07/27/12	120	
	2	08/08/12	150	
	3	08/11/12	0	150

[a] Video counts were used for final escapement in 2012

Appendix D10.–Unexpanded escapement indices and harvests by subdistricts in the Kamishak Bay District, Lower Cook Inlet, 2012.

Location	Harvest[a]				Escapement index[b]				Combined harvest and escapement index counts			
	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum	Sockeye	Coho	Pink	Chum
Augustine Subdistrict (249-30)												
Douglas River Subdistrict (249-40)					1,850	650	2,720	4,328	1,850	650	2,720	4,328
Kamishak River Subdistrict (249-45)			61	2,425	1,122		12,042	42,650	1,122		12,103	45,075
McNeil Cove Subdistrict (249-50)					2,520		90	10,530	2,520		90	10,530
Chenik/Amakdedori Subdistrict (249-55)	55,255				17,275		3,040		72,530		3,040	
Bruin Bay Subdistrict (249-70)					20		31,800	16,074	20		31,800	16,074
Kirschner Lake Subdistrict (249-75)	1,260								1,260			
Rocky Cove Subdistrict (249-78)							1,348	1,290			1,348	1,290
Ursus Cove Subdistrict (249-80)							3,733	3,332			3,733	3,332
Cottonwood Bay Subdistrict (249-83)					150		1,656	3,471	150		1,656	3,471
Iniskin Bay Subdistrict (249-85)							110	3,509			110	3,509
Kamishak Bay District total[c]	56,515	0	61	2,425	22,937	650	56,539	85,184	79,452	650	56,600	87,609

[a] Harvests include all commercial and hatchery harvests.

[b] Unexpanded aerial survey index count, or video count.

[c] Additional non-index streams where salmon were observed are also included. Therefore cumulative escapement values in this table are greater than escapement indices that historically contribute to SEG ranges as shown for index streams only.

Appendix D11.–Estimated pink, chum and sockeye salmon escapements in thousands of fish for the major spawning systems in the Kamishak Bay District of the Lower Cook Inlet Area, 1970–2012.

	Pink salmon							Chum salmon								Sockeye salmon				
Year	Big Kamishak Riv.	Little Kamishak Riv.	Amakdedori Creek	Bruin Bay River	Sunday Creek	Brown's Peak Creek	Total	Big Kamishak River	Little Kamishak Riv.	McNeil River	Bruin Bay	Ursus Cove[a]	Cottonwood Creek	Iniskin Bay	Total	Mikfik Lake	Chenik Lake	Amakdedori Creek	Kamishak Rivers	Total
1970	–	2.0	13.0	40.0	2.0	–	57.0	–	–	–	–	–	0.6	–	0.6	1.0	–	0.3	–	1.3
1971	–	–		22.0	43.0	8.0	73.0	–	–	–	1.0	–	9.0	13.0	23.0	5.0	2.0	1.2	–	8.2
1972	–	–	0.2	2.5	2.0	1.2	5.9	–	–	–	1.0	1.6	4.0	10.0	16.6	13.0	0.7	1.0	–	14.7
1973	15.0	13.0	3.0	2.0	5.0	3.2	41.2	4.0	1.0	10.0	8.0	3.0	4.0	12.0	42.0	2.7	0.3	2.2	–	5.2
1974	1.0	–	1.0	0.6	0.1	0.1	2.8	7.1	0.6	1.5	3.0	3.5	2.5	7.0	25.2	0.9	0.1	0.4	–	1.4
1975	–	–	5.0	20.0	20.0	10.0	55.0	1.1	1.9	1.5	1.5	5.0	8.0	7.0	26.0	6.0	0.1	0.8	–	6.9
1976	8.0	6.0	–	13.5	0.3	1.2	29.0	24.0	21.0	10.0	4.0	6.0	5.0	13.5	83.5	10.0	0.9	1.6	–	12.5
1977	–	–	–	60.0	9.0	13.0	82.0	–	–	20.0	18.0	9.3	10.0	4.4	61.7	9.8	0.2	2.6	–	12.6
1978	12.0	0.4	0.9	33.0	0.2	0.9	47.4	23.0	30.0	45.0	4.0	9.7	12.5	11.4	135.6	12.0	0.1	2.6	1.0	15.7
1979	10.0	3.5	6.0	200.0	12.0	15.0	246.5	15.0	15.0	8.0	15.0	5.0	2.5	4.0	64.5	6.0	0.0	1.0	0.4	7.4
1980	2.0	0.6	3.8	400.0	5.2	2.3	413.9	10.0	13.0	8.0	15.0	8.0	4.2	9.3	67.5	6.5	3.5	2.6	0.1	12.7
1981	–	–	1.5	95.0	14.2	17.7	128.4	11.0	6.0	30.0	10.0	10.0	9.0	9.0	85.0	5.3	2.5	1.9	0.8	10.5
1982	5.0	2.2	6.3	75.0	12.0	3.5	104.0	25.0	18.0	25.0	10.0	9.0	7.0	12.8	106.8	35.0	8.0	3.2	10.0	56.2
1983	–	–	0.2	4.0	4.7	1.7	10.6	25.0	25.0	48.0	5.5	7.7	8.3	12.0	131.5	7.0	11.0	1.2	5.0	24.2
1984	–	0.1	–	110.0	12.0	6.8	128.9	19.0	12.0	21.0	8.0	7.0	6.5	9.8	83.3	6.0	13.0	1.4	2.5	22.9
1985	–	1.6	1.0	3.5	11.4	7.0	24.5	6.0	4.5	9.5	2.0	3.0	3.0	5.0	33.0	20.0	3.5	0.9	0.8	25.2
1986	5.0	2.0	6.0	1,200.0	109.0	28.0	1,350.0	24.0	17.0	22.0	1.0	11.0	11.0	5.9	91.9	7.8	7.0	1.9	5.0	21.7
1987	–	–	0.4	24.0	29.7	40.2	94.3	12.0	18.0	26.0	10.0	9.9	17.0	9.1	102.0	9.0	10.0	1.1	–	20.1
1988	1.0	0.5	1.0	29.0	18.0	17.0	66.5	15.0	13.0	49.0	7.0	9.4	16.0	9.5	118.9	10.1	9.0	0.4	0.5	20.0
1989	–	–	2.0	350.0	103.0	120.0	575.0	30.0	12.0	34.0	8.0	6.3	8.0	5.9	104.2	11.5	12.0	1.2	0.5	25.2
1990	–	–	0.1	19.0	2.8	1.0	22.9	2.5	7.9	8.0	4.0	3.8	4.3	8.4	38.9	8.8	17.0	1.8	0.2	27.8
1991	–	0.9	0.7	74.9	20.9	16.7	114.1	8.7	8.4	10.0	6.0	1.3	7.7	8.3	50.4	9.7	10.2[b]	1.9	0.7	22.5
1992	–	–	3.2	3.2	2.9	5.0	14.3	4.5	7.1	19.2	8.5	1.7	6.1	3.4	50.5	7.8	9.3[b]	1.9	4.9	23.9
1993	–	–	1.7	86.4	57.8	41.6	187.5	9.1	6.3	17.4	6.0	7.7	12.0	8.0	66.5	6.4	4.0[b]	2.0	4.1	16.5
1994	–	–	0.7	5.9	3.1	1.3	11.0	–	9.0	15.0	6.1	6.2	10.2	18.9	65.4	9.5	0.8[b]	0.8	–	11.1
1995	–	–	4.5	307.3	95.9	96.7	504.4	–	–	14.4	6.6	11.1	15.4	22.7	70.2	10.1	1.1[b]	2.4	–	13.6

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	Pink salmon							Chum salmon								Sockeye salmon				
Year	Big Kamishak Riv.	Little Kamishak Riv.	Amakdedori Creek	Bruin Bay River	Sunday Creek	Brown's Peak Creek	Total	Big Kamishak River	Little Kamishak Riv.	McNeil River	Bruin Bay	Ursus Cove[a]	Cottonwood Creek	Iniskin Bay	Total	Mikfik Lake	Chenik Lake	Amakdedori Creek	Kamishak Rivers	Total
1996	16.7	–		27.5	2.8	2.4	49.4	11.1	4.4	16.1	14.9	7.6	16.1	7.8	78.0	6.5	3.0[b]	2.9	1.8	14.2
1997	–	–	1.7	162.7	52.5	42.3	259.2	–	–	27.5	8.8	6.2	5.6	15.4	63.5	8.5	2.3[b]	1.5	–	12.3
1998	2.0	–	–	134.9	24.0	7.9	168.8	7.1	9.7	23.5	9.4	4.6	2.3	18.6	75.2	12.6	1.9	4.1	–	18.6
1999	5.7	4.2	–	2.9	5.3	2.6	20.7	11.6	8.9	13.5	10.3	21.0	12.0	23.3	100.6	15.7	2.9	8.8	2.2	29.6
2000	14.9	13.0	–	176.7	39.8	9.8	254.2	45.3	26.9	18.6	13.6	41.7	24.1	23.6	193.8	10.9	4.8	3.3	1.5	20.5
2001	–	–	6.0	18.5	26.2	19.2	69.9	36.3	27.2	17.0	21.8	37.7	15.9	13.8	169.7	5.4	0.3	2.7	2.5	10.9
2002	–	3.4	0.9	1,598.5	81.9	27.5	1,712.2	17.4	16.4	11.3	9.9	17.1	42.2	28.5	142.8	16.7	4.7	3.2	3.3	27.9
2003	–	–	–	138.7	346.7	285.0	770.4	16.4	22.2	23.3	13.1	30.4	72.8	18.7	196.9	12.8	13.8	11.8	2.6	41.0
2004	–	3.0	–	66.5	31.5	18.1	119.1	57.9	45.3	11.2	15.9	16.0	16.3	22.0	184.6	14.0	17.0	7.2	0.8	39.0
2005	–		–	98.3	116.2	61.0	275.5	25.7	12.1	17.4	21.2	12.2	17.9	16.5	123.0	6.0	14.5[c]	1.7	3.9	26.1
2006	–	77.0	–	515.1	70.0	35.7	697.9	58.2	42.9	28.2	7.0	15.7	13.2	15.6	180.8	17.7	13.9[c]	0.3	–	31.9
2007	–	5.1	–	350.4	394.8	249.4	999.7	14.8	15.6	13.6	3.1	20.9	12.5	5.3	85.8	11.2	18.3[c]	3.8	0.1	33.5
2008	–	34.3	–	150.7	20.4	17.4	222.8	4.5	21.3	9.8	17.5	6.5	11.6	20.0	91.2	5.6	11.3[c]	3.2	0.2	20.3
2009	10.4	0.8	9.2	1,067.4	106.3	63.6	1,257.6	15.0	4.2	18.8	10.1	12.9	19.4	30.8	111.2	15.1	15.3[d]	2.2	0.1	32.7
2010	–	–	0.7	40.3	6.6	3.1	50.6	–	18.4	10.5	6.2	11.8	15.8	19.3	82.0	11.3	17.3[d]	1.2	0.1	29.9
2011	9.3	13.1	4.2	4.5	0.8	2.0	34.0	5.5	19.3	31.0	3.5	10.6	4.7	16.5	91.2	0.4	10.3[d]	3.4	1.6	15.8
10-yr average	9.8	19.5	3.8	403.0	117.5	76.3	629.9	23.9	21.8	17.5	10.7	15.4	22.7	19.3	131.4	11.1	13.6	3.8	1.4	29.9
2012	2.7	9.3	3.0	31.8	1.3	2.8	50.9	12.4	30.3	10.4	16.1	2.8	2.8	3.0	77.8	3.1	16.5[d]	0.8	1.1	21.5

Note: Unless otherwise noted, estimated escapements are derived from aerial surveys.

[a] "Ursus Cove" is the sum of Ursus Lagoon RH Creek and Ursus Lagoon Creek.

[b] Escapement derived from weir counts.

[c] Escapement derived from a combination of weir, video counts, and/or aerial counts.

[d] Escapement derived from video counts.

APPENDIX E: SUBSISTENCE, PERSONAL USE AND HOMEPACK HARVESTS

Appendix E1.–Subsistence and sport salmon catch in numbers of fish by species for the village of Port Graham, Lower Cook Inlet, 1979–2012.

		Reported Harvest						
Year	Households Reporting	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Dolly Varden	Total salmon
1979	–	222	777	506	1,170	494	–	3,169
1980	–	–	–	–	–	–	–	–
1981	–	116	1,694	625	298	150	–	2,883
1982	34	107	820	602	858	183	15	2,570
1983	30	67	1,026	431	174	95	1	1,793
1984	23	27	2,037	125	269	6	0	2,464
1985	23	141	481	91	32	24	0	769
1986	27	123	274	179	237	13	12	826
1987	33	20	219	575	230	70	20	1,114
1988	27	96	411	459	542	75	18	1,583
1989	20	51	94	460	640	58	159	1,303
1990	32	211	524	803	1,013	102	666	2,653
1991	33	155	58	541	1,494	185	257	2,433
1992	36	129	98	475	745	178	398	1,625
1993	31	253	154	346	997	135	214	1,885
1994	42	273	260	859	866	461	1,133	2,719
1995 [a]	49	486	379	369	786	376	66	2,396
1996	48	255	684	341	312	251	161	1,843
1997	25	202	324	203	497	152	57	1,378
1998	16	164	271	243	459	240	20	1,377
1999	21	383	382	427	150	214	64	1,556
2000	35	241	784	252	355	483	–	2,115
2001	15	104	176	57	20	32	–	389
2002	23	250	417	90	150	74	–	981
2003	16	321	1,991	425	266	150	87	3,153
2004 [b]	50	283	572	514	363	130	–	1,862
2005	46	265	192	51	349	52	–	909
2006	14	192	31	1	26	24	207	274
2007	24	92	552	0	74	63	12	781
2008 [c]	18	77	550	0	36	22	37	685
2009	25	33	1,982	132	49	69	40	2,265
2010	16	30	116	124	24	37	–	331
2011	15	35	684	107	132	150	–	1,108
Previous 10-year Average	25	158	709	144	147	77	77	1,235
2012	7	24	661	14	282	26	0	1,007

Source: Data on file with ADF&G, Division of Subsistence; gear types include set gillnet, rod/reel, and handline.

[a] Salmon totals and permits include 3 reports from non-residents of Port Graham Village.

[b] ADF&G Division of Subsistence estimate.

[c] Harvest reports for 2008 incomplete.

Appendix E2.–Subsistence and sport salmon catch in numbers of fish by species for the village of Nanwalek (formerly English Bay), Lower Cook Inlet, 1978–2012.

Year	Households reporting	Chinook salmon	Sockeye salmon	Coho salmon	Pink salmon	Chum salmon	Dolly Varden	Total salmon
1978	–	–	–	–	–	–	–	–
1979	–	137	1,545	2,437	2,186	305	–	6,610
1980	–	–	–	–	–	–	–	–
1981	–	24	1,075	314	621	19	–	2,053
1982	27	17	1,534	891	2,074	37	75	4,553
1983	16	0	1,454	40	13	0	0	1,507
1984	1	18	1,225	385	404	0	0	2,032
1985	1	5	696	530	313	2	0	1,546
1986	17	2	373	302	825	1	144	1,503
1987	22	1	682	339	484	44	20	1,550
1988	21	8	610	385	1,214	35	70	2,252
1989	24	0	63	695	855	16	523	1,629
1990	28	54	638	614	1,947	49	2,833	3,302
1991	30	8	630	1,512	3,093	36	848	5,279
1992	35	71	437	675	676	58	1,331	1,917
1993	25	24	994	567	1,666	122	577	3,373
1994	28	27	570	511	1,113	43	473	2,264
1995	38	99	1,416	169	487	0	465	2,171
1996	27	55	1,060	598	437	25	221	2,175
1997	1	0	1	0	14	1	0	16
1998	3	5	18	0	0	0	31	23
1999	32	102	2,775	1,320	1,873	890	631	6,960
2000	32	18	3,880	1,579	1,251	471	–	7,199
2001	34	29	909	1,238	1,434	196	–	3,806
2002	56	96	10,203	967	1,681	414	230	13,361
2003	35	144	3,221	513	1,306	381	102	5,565
2004	24	52	2,968	842	1,277	95	291	5,234
2005	23	27	1,934	1,142	1,259	128	605	4,490
2006	39	111	2,215	1,179	2,038	207	679	5,750
2007	–	–	–	–	–	–	–	–
2008	53	46	3,615	1,345	2,646	76	315	7,728
2009	19	11	1,515	396	865	71	420	2,858
2010	20	0	1,514	1,324	1,030	271	365	4,139
2011	41	18	5,009	1,381	2,499	362	–-	9,269
Previous 10-yr average	34	56	3,577	1,010	1,622	223	376	6,488
2012 [a]	1	0	300	400	200	5	50	905

Source: Data on file with ADF&G, Division of Subsistence; gear types include set gillnet, rod/reel, and handline.

[a] Limited reporting from Nanwalek residents in 2012 likely resulted in a conservative estimate of harvest.

Appendix E3.–Salmon set gillnet catch in numbers of fish by species and permit/effort information for the Seldovia area subsistence fishery, Lower Cook Inlet, 1996–2012.

	Permits				Reported harvest					
Year	Issued	Returned	Fished	Not Fished	Chinook	Sockeye	Coho	Pink	Chum	Total
Early Season: April–May[a]										
1996	41	41	13	28	51	7	0	0	0	58
1997	19	16	12	4	44	19	0	0	0	63
1998	20	19	10	9	132	61	0	8	0	201
1999	16	15	12	3	150	130	0	0	38	318
2000	28	21	17	4	189	249	0	0	14	452
2001	19	17	14	3	134	124	0	0	0	258
2002	20	18	12	6	123	222	0	0	3	348
2003	19	13	10	3	67	210	0	1	54	332
2004	13	10	9	1	91	63	0	0	15	169
2005	15	13	4	9	46	0	0	0	0	46
2006	15	12	6	6	12	10	0	1	0	23
2007	15	12	5	7	19	27	0	0	0	46
2008	10	8	3	5	3	15	0	0	0	18
2009	6	5	1	4	14	0	0	0	0	14
2010	11	8	2	6	0	54	0	0	0	54
2011	4	2	1	1	0	49	0	0	0	49
Prev. 10-yr average	13	10	5	5	38	65	0	0	7	110
2012	16	6	2	4	3	26	0	0	0	29
Late Season: August[b]										
1996	4	3	1	2	0	1	0	0	0	1
1997	1	1	0	1	0	0	0	0	0	0
1998	3	2	1	1	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0
2002	1	1	1	0	0	9	13	31	6	59
2003	1	1	1	0	0	10	1	12	1	24
2004	1	1	1	0	0	0	4	0	0	4
2005	3	2	2	0	0	70	13	93	12	188
2006	2	2	1	1	0	0	0	21	0	21
2007	4	4	3	1	0	24	9	80	27	140
2008	2	2	2	0	0	16	41	65	5	127
2009	12	9	8	1	0	78	10	44	14	146
2010	5	4	3	1	2	46	31	66	35	180
2011	3	2	1	1	0	6	0	10	0	16
Prev. 10-yr average	3	3	2	1	0	26	12	42	10	91
2012	4	1	1	0	0	3	0	20	0	23

Source: Data on file with ADF&G, Division of Subsistence; gear types include set gillnet, rod/reel, and handline.

[a] Early season dates in 1996 and 1997 were from April 1 to May 20; subsequent years were from April 1 to May 30.

[b] Late season dates are restricted to the first 2 weekends in August.

Appendix E4.–Personal use/subsistence set gillnet salmon catches, in numbers of fish by species, and effort, Southern District (excluding the Port Graham/Nanwalek subsistence fishery and the Seldovia subsistence fishery), Lower Cook Inlet, 1969–2012.

	Permits				Reported harvest						
Year	Issued	Returned	Fished	Not fished	Chinook	Sockeye	Coho	Pink	Chum	Other	Total
1969	47	44	35	9	0	9	752	38	0	17	816
1970	78	73	55	18	0	12	1,179	143	13	39	1,386
1971	112	95	53	42	2	16	1,549	44	7	20	1,638
1972	135	105	64	41	1	11	975	48	69	19	1,123
1973	143	128	82	46	0	18	1,304	84	40	9	1,455
1974	148	118	52	66	0	16	376	43	77	27	539
1975	292	276	221	55	4	47	1,960	632	61	95	2,799
1976	242	221	138	83	16	46	1,962	1,513	56	75	3,668
1977	197	179	137	42	12	46	2,216	639	119	84	3,116
1978	311	264	151	113	4	35	2,482	595	34	89	3,239
1979	437	401	238	163	6	37	2,118	2,251	41	130	4,583
1980	533	494	299	195	43	32	3,491	1,021	25	153[a]	4,765
1981	403	383	283	100	15	73	4,370	718	68	0	5,244
1982	395	372	301	71	41	49	7,398	956	154	0	8,598
1983	344	328	210	118	5	17	2,701	305	44	2	3,074
1984	368	346	219	127	3	25	3,639	804	105	27	4,603
1985	328	302	205	97	5	49	3,317	138	34	3	3,546
1986	349	310	247	63	7	68	3,831	3,132	56	0	7,094
1987	363	339	250	89	5	50	3,979	279	61	0	4,374
1988	439	417	300	117	14	73	5,007	1,445	75	0	6,614
1989	477	453	333	120	41	156	7,219	883	53	49	8,401
1990	578	543	420	123	12	200	8,323	1,846	69	0	10,450
1991	472	459	295	164	8	47	4,931	366	23	0	5,375
1992	365	350	239	111	5	63	2,277	643	21	0	3,009
1993	326	317	215	102	6	44	1,992	463	18	0	2,523
1994	286	284	224	60	66	80	4,097	1,178	18	0	5,439
1995	235	232	178	54	118	108	2,916	343	7	0	3,492
1996	299	293	213	80	302	102	3,347	1,022	24	0	4,797
1997	276	264	186	78	384	191	1,817	257	12	0	2,661
1998	227	214	142	72	135	20	1,461	167	5	0	1,788
1999	146	141	111	30	276	119	1,803	168	3	0	2,369
2000	213	206	151	55	104	28	2,064	304	4	0	2,504
2001	154	148	112	34	86	27	1,579	150	16	0	1,858
2002	122	113	93	20	61	33	1,521	251	12	0	1,878
2003	104	96	72	24	17	57	1,071	170	9	0	1,324
2004	91	83	65	18	7	56	1,554	172	16	0	1,805
2005	108	96	69	27	8	57	833	296	13	0	1,207
2006	89	82	62	20	15	41	1,295	221	5	0	1,577
2007	141	133	95	38	10	113	1,431	641	34	0	2,229
2008	146	142	107	35	2	92	1,844	687	14	0	2,639
2009	145	142	90	52	9	273	646	101	4	1	1,034
2010	128	122	82	41	14	149	875	251	17	0	1,306
2011	119	112	81	31	15	223	806	145	5	3	1,197
Prev. 10-yr average	116	97	56	31	63	649	741	153	7	0	1,620
2012	98	95	69	26	5	137	1,471	275	6	0	1,894

Note: Figures after 1991 include information from both returned permits and inseason oral reports.

[a] Steelhead trout *Oncorhynchus mykiss*.

Appendix E5.–Summary of personal use/subsistence salmon gillnet permit holders in the Southern District of Lower Cook Inlet (excluding the Port Graham/Nanwalek subsistence fishery and the Seldovia subsistence fishery) by area of residence, 1990–2012.

	Homer/ Fritz Cr.		Anchorage Area[a]		Halibut Cove		Anchor Pt./ Ninilchik		Seldovia		Pt. Graham/ Nanwalek		Kenai/ Soldotna		Other		Total Permits
Year	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Issued
1990	441	76.3%	36	6.2%	5	0.9%	65	11.2%	12	2.1%	0	0.0%	6	1.0%	13	2.2%	578
1991	384	81.4%	27	5.7%	8	1.7%	41	8.7%	6	1.3%	0	0.0%	4	0.8%	2	0.4%	472
1992	302	82.7%	21	5.8%	5	1.4%	32	8.8%	3	0.8%	0	0.0%	1	0.3%	1	0.3%	365
1993	242	74.2%	25	7.7%	5	1.5%	44	13.5%	3	0.9%	0	0.0%	5	1.5%	2	0.6%	326
1994	235	82.2%	20	7.0%	4	1.4%	21	7.3%	1	0.3%	0	0.0%	1	0.3%	4	1.4%	286
1995	191	81.3%	15	6.4%	7	3.0%	20	8.5%	1	0.4%	0	0.0%	0	0.0%	1	0.4%	235
1996	241	80.6%	16	5.4%	7	2.3%	26	8.7%	3	1.0%	1	0.3%	2	0.7%	3	1.0%	299
1997	232	84.1%	13	4.7%	3	1.1%	20	7.2%	4	1.4%	0	0.0%	1	0.4%	3	1.1%	276
1998	175	77.1%	18	7.9%	2	0.9%	24	10.6%	5	2.2%	0	0.0%	2	0.9%	1	0.4%	227
1999	96	65.8%	18	12.3%	1	0.7%	23	15.8%	3	2.1%	0	0.0%	4	2.7%	1	0.7%	146
2000	168	78.9%	15	7.0%	2	0.9%	21	9.9%	4	1.9%	0	0.0%	1	0.5%	2	0.9%	213
2001	109	70.8%	10	6.5%	3	1.9%	20	13.0%	5	3.2%	0	0.0%	4	2.6%	3	1.9%	154
2002	85	70.2%	7	5.8%	3	2.5%	14	11.6%	6	5.0%	0	0.0%	5	4.1%	1	0.8%	121
2003	74	71.2%	9	8.7%	2	1.9%	11	10.6%	4	3.8%	0	0.0%	4	3.8%	0	0.0%	104
2004	70	76.9%	9	9.9%	2	2.2%	7	7.7%	2	2.2%	0	0.0%	1	1.1%	0	0.0%	91
2005	80	74.1%	12	11.1%	2	1.9%	8	7.4%	1	0.9%	0	0.0%	3	2.8%	2	1.9%	108
2006	74	84.1%	6	6.8%	1	1.1%	4	4.5%	0	0.0%	0	0.0%	2	2.3%	1	1.1%	88
2007	116	82.3%	11	7.8%	3	2.1%	7	5.0%	0	0.0%	0	0.0%	1	0.7%	3	2.1%	141
2008	121	82.9%	3	2.1%	2	1.4%	13	8.9%	2	1.4%	0	0.0%	3	2.1%	2	1.4%	146
2009	107	83.6%	11	8.6%	1	0.8%	19	14.8%	2	1.6%	0	0.0%	5	3.9%	0	0.0%	145
2010	103	80.5%	8	6.3%	1	0.8%	9	7.0%	2	1.6%	0	0.0%	5	3.9%	0	0.0%	128
2011	87	68.0%	13	10.2%	2	1.6%	9	7.0%	2	1.6%	0	0.0%	6	4.7%	0	0.0%	119
Prev. 10-year average	92	76.4%	9	7.6%	2	1.6%	10	8.3%	2	0	0	0.0%	4	2.9%	1	0.7%	119.1
2012	75	76.5%	7	7.1%	1	1.0%	10	10.2%	0	0.0%	0	0.0%	5	5.1%	0	0.0%	98

[a] After 1989, "Anchorage Area" includes Mat-Su Valley, Eagle River, Chugiak, and/or Fort Richardson.

Appendix E6.–Historical harvest and numbers of permits actively fished by area for the Southern District personal use coho salmon set gillnet fishery, 1981–2012.

	Troublesome Creek to tip of Homer Spit		East side of Homer Spit		Mud Bay to Fritz Creek		Fritz Creek to Swift Creek		Bear Cove to Neptune Bay		Neptune Bay to Little Tutka Bay	
Year	Permits	Coho salmon	Permits	Coho salmon	Permits	Coho salmon	Permits	Coho salmon	Permits	Coho salmon	Permits	Coho salmon
1981	–	68	–	419	–	1,239	–	2,382	–	259	–	3
1982	–	118	–	471	–	3,307	–	3,260	–	237	–	5
1983	–	18	–	126	–	944	–	1,319	–	202	–	92
1984	–	25	–	274	–	1,686	–	1,517	–	102	–	35
1985	–	119	–	87	–	1,218	–	1,681	–	261	–	51
1986	–	36	–	490	–	1,415	–	1,651	–	166	–	73
1987	–	101	–	590	–	1,103	–	1,953	–	180	–	52
1988	–	78	–	472	–	1,248	–	2,769	–	384	–	56
1989	–	234	–	1,259	–	1,591	–	3,455	–	616	–	74
1990	–	287	–	2,117	–	1,748	–	3,478	–	465	–	228
1991	–	328	–	1,585	–	798	–	1,873	–	245	–	51
1992	–	37	–	938	–	464	–	719	–	116	–	18
1993	–	86	–	881	–	295	–	627	–	74	–	29
1994	–	211	–	1,413	–	596	–	1,558	–	314	–	5
1995	–	414	–	1,124	–	372	–	769	–	202	–	35
1996	16	220	85	1,871	39	364	38	603	32	272	3	17
1997	19	149	81	1,294	36	133	32	134	13	83	5	24
1998	10	86	77	1,062	29	162	10	39	13	75	3	37
1999	4	25	67	1,225	11	123	4	43	16	286	9	101
2000	11	210	84	1,372	18	169	15	126	16	120	7	67
2001	12	94	55	920	10	90	8	185	19	189	10	101
2002	11	212	38	624	13	99	8	195	13	201	10	190
2003	7	81	29	627	10	57	7	43	12	135	7	128
2004	2	75	23	610	8	131	9	228	15	365	8	145
2005	4	23	27	305	4	43	8	126	16	190	10	146
2006	1	20	20	388	9	179	9	248	18	375	5	85
2007	0	0	24	179	11	153	32	885	20	170	8	44
2008	1	28	23	322	30	368	25	776	16	259	12	91
2009	5	29	12	39	15	52	32	310	18	187	8	29
2010	0	0	15	118	18	65	38	466	28	194	13	32
2011	3	31	15	54	10	49	44	536	27	103	14	33
Prev. 10-yr average	3	50	23	327	13	120	21	381	18	218	10	92
2012	3	0	11	72	13	32	42	1,202	19	140	7	25

Appendix E7.–Salmon retained from the commercial harvest for personal use (homepack) by species and gear type from Lower Cook Inlet districts, 1996–2012.

	Permits deliv.		Chinook salmon		Sockeye salmon		Coho salmon		Pink salmon		Chum salmon	
Year	Set gillnet	Purse seine	Set gillnet	Purse seine	Set gillnet	Purse seine	Set gillnet	Purse seine	Set gillnet	Purse seine	Set gillnet	Purse seine
1996	1	2	6	–	19	32	5	–	–	–	–	–
1997	1	–	1	–	11	–	–	–	–	–	–	–
1998	–	–	–	–	–	–	–	–	–	–	–	–
1999	–	–	–	–	–	–	–	–	–	–	–	–
2000	–	–	–	–	–	–	–	–	–	–	–	–
2001	–	–	–	–	–	–	–	–	–	–	–	–
2002	1	–	–	–	20	–	–	–	100	–	3	–
2003	2	–	3	–	2	–	–	–	750	–	–	–
2004	1	–	2	–	38	–	10	–	9	–	4	–
2005	3	1	7	–	79	10	38	–	121	–	8	–
2006	4	3	9	–	58	169	73	17	72	–	13	7
2007	4	–	1	–	204	–	76	–	3	–	–	–
2008	2	–	–	–	39	–	7	–	40	–	6	–
2009	3	–	1	–	35	–	14	–	23	–	9	–
2010	2	–	2	–	29	–	4	–	–	–	3	–
2011	3	1	2	3	62	–	3	–	487	–	27	–
Prev. 10-yr average	3	2	3	<1	57	60	23	6	161	0	7	2
2012	7	–	4	–	63	–	61	–	323	–	31	–

Note: No homepacks from commercial harvest reported before 1996. Regulations requiring reporting of fish harvested but not sold (5 AAC 39.130(c)(10)) on fish tickets established in 2008.

Appendix E8.–Lower Cook Inlet commercial homepack, and personal use harvest by permit holder community of residence, 2012.

Commercial Homepack[a]

Community	Permits	Chinook	Sockeye	Coho	Pink	Chum	Total
Homer	4	3	29	51	44	0	127
Seldovia	3	1	34	10	279	31	355
USA balance	0						0
Total	7	4	63	61	323	31	482

Southern District Personal Use set gillnet fishery [b]

	Permits		Chinook	Sockeye	Coho	Pink	Chum	Total
Community	Issued	Returned	salmon	salmon	salmon	salmon	salmon	salmon
Anchorage area	7	7	3	14	55	12		84
Anchor Pt./Ninilchik/Nikolaevsk	10	10		3	6	8	1	18
Halibut Cove	1	1				4	2	6
Homer	75	72	2	60	1,380	224	3	1,669
Kenai/Soldotna	5	5		60	30	27		117
Pt.Graham/Nanwalek	0	0						0
Seldovia	0	0						0
Total	98	95	5	137	1,471	275	6	1,894

Port Graham/Nanwalek subsistence fishery [c]

	Permits		Chinook	Sockeye	Coho	Pink	Chum	Total
Community	Issued	Returned	salmon	salmon	salmon	salmon	salmon	salmon
Anchorage area	1	0						0
Cooper Landing	1	0						0
Fairbanks area	1	0						0
Homer	0	0						0
Nanwalek [d]	60[e]	1		300	400	200	5	905
Port Graham	16	7	24	661	14	282	26	1,007
Total	79	8	24	961	414	482	31	1,912

Seldovia subsistence fishery [f, g]

	Permits		Chinook	Sockeye	Coho	Pink	Chum	Total
Community	Issued	Returned	salmon	salmon	salmon	salmon	salmon	salmon
Anchor Point	1	0						0
Homer	0	0						0
Nanwalek	0	0						0
Port Graham	0	0						0
Seldovia	12	7	3	29		20		52
Total	13	7	3	29	0	20	0	52

[a] Homepack fish as defined in 5 AAC 39.010 as finfish retained "from lawfully taken commercial catch for that person's own use."

[b] As defined in 5 AAC 77.549 *Personal Use Coho Salmon Fishery Management Plan*.

[c] Defined as subsistence harvest from the Port Graham and Nanwalek Sections of the Port Graham Subdistrict in the Southern District.

[d] Limited reporting from Nanwalek residents in 2012 likely resulted in a conservative estimate of harvest.

[e] On May 2, fifty permits were sent to the Nanwalek Traditional Council, with an additional 10 shipped later at their request.

[f] Defined as subsistence harvest from the Seldovia Subdistrict in the Southern District.

[g] Includes harvests from both early and late season Seldovia subsistence fisheries.

APPENDIX F: HATCHERY PRODUCTION AND RETURNS

Appendix F1.–Summary of salmon runs to Lower Cook Inlet hatcheries, 2012.

Sockeye salmon

Hatchery or release site, (hatchery [a])	BY 2007 Release	BY 2008 Release	2012 Forecast Run	Estimated CPF[b] Contribution	Estimated Sales Harvest[c] Contribution	Broodstock & Unharvested Contribution	Estimated Total Run	2012 Eggs Collected
Bear Lake and Resurrection Bay, (TLH)	4,075,000	4,193,000	216,000	0	83,608	12,459	96,067	6,041,114
Hidden Lake, (TLH)	917,000	911,000	32,130	26,155	0	15,879	42,034	964,148
Leisure and Hazel lakes, (TLH)	3,214,000	2,411,000	6,500	10,732	11,938	45	22,715	0
Kirschner Lake, (TLH)	300,000	0	10,200	0	1,260	1,300	2,560	0
English Bay Lakes, (TLH)	246,000	0	NE	0	0	411	411	432,022
Tutka Bay Lagoon, (TLH)[d]	301,000	278,000	28,000	0	17,756	2,590	20,346	4,326,340
Port Graham Hatchery, (TLH)	112,000	0	2,000	0	30	503	533	899,121
Total Sockeye Salmon	9,165,000	7,793,000	294,830	36,887	114,592	33,187	184,666	12,662,745

Coho salmon

Hatchery or release site, (hatchery)	BY 2009 Release	2012 Forecast Run	Estimated CPF Contribution	Estimated Sales Harvest Contribution	Broodstock & Unharvested Contribution	Estimated Total Run	Eggs Collected
Bear Lake, (TLH)	435,000	2,800	NA	0	924	NA	630,927
Total Coho Salmon	435,000	2,800	NA	0	924	NA	630,927

Pink salmon

Hatchery or release site, (hatchery)	BY 2010 Release	2012 Forecast Run	Estimated CPF Contribution	Estimated Sales Harvest Contribution	Broodstock & Unharvested Contribution	Estimated Total Run	Eggs Collected
Tutka Bay Lagoon Hatchery (TBLH)	0	0	0	0	0	0	5,330,721
Halibut Cove Lagoon, (TBLH)	0	0	0	0	0	0	0
Port Graham hatchery site (TBLH)	0	0	0	0	0	0	16,438,682
Total Pink Salmon	0	0	0	0	0	0	21,769,403
Total-All Salmon			36,887	114,592	34,111	184,666	35,063,075

[a] TLH = Trail Lakes Hatchery, TBLH = Tutka Bay Lagoon Hatchery.

[b] Common Property Fisheries (CPF) include commercial, sport, personal use, and subsistence harvests.

[c] Hatchery cost recovery sales in number of fish.

[d] Tutka Bay Lagoon Hatchery has not produced sockeye salmon since 2004. Returns of this species are from remote releases from the Trail Lakes Hatchery. Sockeye salmon eggs collected at this facility were taken back to the Trail Lakes Hatchery for incubation.

Appendix F2.–Daily sockeye salmon sales and broodstock collection; sales and broodstock summary in numbers of fish for Cook Inlet Aquaculture Association, 2012.

			Sales harvest[a]		Broodstock harvest	
Date	Gear	Location	Daily	Cumulative	Daily	Cumulative
5/24/2012	Purse seine	Resurrection Bay	469	469	0	0
5/27/2012	" "	" "	2,035	2,504	0	0
5/28/2012	" "	" "	2,149	4,653	0	0
5/29/2012	" "	" "	1,189	5,842	0	0
5/30/2012	" "	" "	4,156	9,998	0	0
5/31/2012	" "	" "	4,339	14,337	0	0
6/2/2012	" "	" "	3,602	17,939	0	0
6/3/2012	" "	" "	6,415	24,354	0	0
6/4/2012	" "	" "	5,814	30,168	0	0
6/5/2012	" "	" "	6,498	36,666	0	0
6/6/2012	" "	" "	8,099	44,765	0	0
6/7/2012	" "	" "	4,995	49,760	0	0
6/8/2012	" "	" "	2,758	52,518	0	0
6/12/2012	" "	" "	11,922	64,440	0	0
6/15/2012	" "	" "	8,228	72,668	0	0
6/16/2012	" "	" "	3,887	76,555	0	0
6/18/2012	" "	" "	3,256	79,811	0	0
6/19/2012	" "	" "	2,237	82,048	0	0
7/6/2012	Purse seine	Resurrection Bay	244	82,292	0	0
7/4/2012	Weir or beach seine	Bear Lake	247	247	0	0
7/6/2012	" "	" "	441	688	0	0
7/8/2012	" "	" "	16	704	0	0
7/9/2012	" "	" "	210	914	0	0
7/12/2012	" "	" "	8	922	0	0
7/14/2012	" "	" "	194	1,116	0	0
7/15/2012	" "	" "	5	1,121	0	0
7/16/2012	" "	" "	4	1,125	0	0
7/17/2012	" "	" "	85	1,210	0	0
7/18/2012	" "	" "	27	1,237	0	0
7/19/2012	" "	" "	21	1,258	0	0
7/20/2012	" "	" "	14	1,272	0	0
7/21/2012	" "	" "	9	1,281	0	0
7/22/2012	" "	" "	9	1,290	0	0
7/23/2012	" "	" "	20	1,310	0	0
7/25/2012	" "	" "	7	1,317	0	0
8/2/2012	" "	" "		1,317	386	386
8/3/2012	" "	" "		1,317	202	588
8/5/2012	" "	" "		1,317	227	815
8/6/2012	" "	" "		1,317	224	1,039
8/7/2012	" "	" "		1,317	222	1,261
8/8/2012	" "	" "		1,317	222	1,483
8/9/2012	" "	" "		1,317	447	1,930
8/10/2012	" "	" "		1,317	444	2,374
8/13/2012	" "	" "		1,317	445	2,819
8/14/2012	" "	" "		1,317	451	3,270
8/15/2012	" "	" "		1,317	451	3,721
8/16/2012	" "	" "		1,317	233	3,954
8/17/2012	Weir or beach seine	Bear Lake		1,317	474	4,428

-continued-

Date	Gear	Location	Sales Harvest Daily	Sales Harvest Cumulative	Broodstock Daily	Broodstock Cumulative
7/25/2012	Purse seine	Tutka Bay		0	2,590	2,590
7/27/2012	" "	" "	518	518	0	2,590
7/28/2012	" "	" "		518	0	2,590
7/29/2012	" "	" "		518	0	2,590
7/30/2012	" "	" "	1,837	2,355	0	2,590
8/1/2012	" "	" "		2,355	0	2,590
8/2/2012	" "	" "	2,234	4,589	0	2,590
8/3/2012	" "	" "	2,964	7,553	0	2,590
8/5/2012	" "	" "	2,784	10,337	0	2,590
8/7/2012	" "	" "	2,295	12,632	0	2,590
8/9/2012	" "	" "		12,632	0	2,590
8/11/2012	" "	" "	2,987	15,619	0	2,590
8/27/2012	Purse seine	Tutka Bay	2,137	17,756	0	2,590
7/24/2012	Purse seine	China Poot	5,022	5,022	0	0
7/25/2012	" "	" "	3,458	8,480	0	0
7/26/2012	" "	" "	1,128	9,608	0	0
7/29/2012	" "	" "	1,491	11,099	0	0
8/7/2012	" "	" "	777	11,876	0	0
8/9/2012	Purse seine	China Poot	62	11,938	0	0
7/24/2012	Purse seine	Kirschner SHA	1,260	1,260	0	0
7/25/2012	Purse seine	Port Graham	30	30	503	503
9/12/2012	beach seine	English Bay	0	0	411	411
9/26/2012	Weir or beach seine	Hidden Lake[b]	0	0	396	396
9/27/2012	Weir or beach seine	Hidden Lake[b]	0	0	396	792
9/8/2012	Weir or beach seine	Shell Lake[b]	0	0	279	279

Hatchery escapement summary in numbers of fish[c]	
Cost Recovery Harvest	114,593
Raceway harvest	0
Viable broodstock (spawned,eggs in incubators)	8,297
Unviable broodstock (green/over-ripe/bad)	117
Unspawned fish (e.g. excess males/females)	0
Holding mortalities (raceway, pen mortalities)	321
Estimated unharvested return	3,300
Estimated total return to hatchery	126,628

Sales summary	
Whole fish sales	114,593
Raceway sales	0
Carcass sales	0
Total sales	114,593

[a] Source: ADF&G fish ticket database.

[b] CIAA Projects conducted in Upper Cook Inlet.

[c] Data from CIAA (2012) and ADF&G fish ticket database.

Appendix F3.–Daily pink salmon sales and broodstock collection; sales and broodstock summary in numbers of fish for Cook Inlet Aquaculture Association, 2012.

			Sales harvest[a,b]		Broodstock harvest[c]	
Date	Gear	Location	Daily	Cumulative	Daily	Cumulative
7/24/2012	Seine	China Poot	100	100	0	0
7/25/2012	Seine	" "	75	175	0	0
7/26/2012	Seine	" "	35	210	0	0
7/29/2012	Seine	" "	47	257	0	0
8/7/2012	Seine	" "	143	400	0	0
8/9/2012	Seine	China Poot	186	586	0	0
7/25/2012	Seine	Tutka Bay	0	0	1,006	1,006
7/29/2012	" "	" "	0	0	525	1,531
7/30/2012	" "	" "	54	54	0	1,531
8/2/2012	" "	" "	21	75	619	2,150
8/5/2012	" "	" "	45	120	589	2,739
8/7/2012	" "	" "	8	128	0	2,739
8/9/2012	" "	" "	0	128	3,241	5,980
8/27/2012	Seine	Tutka Bay	0	128	2,160	8,140
7/25/2012	Seine	Port Graham	0	0	120	120
8/8/2012	" "	" "	0	0	2,130	2,250
8/10/2012	" "	" "	0	0	1,499	3,749
8/12/2012	" "	" "	0	0	1,512	5,261
8/14/2012	" "	" "	0	0	876	6,137
8/15/2012	" "	" "	0	0	2,571	8,708
8/16/2012	" "	" "	0	0	2,496	11,204
8/17/2012	" "	" "	0	0	2,257	13,461
8/18/2012	" "	" "	0	0	1,695	15,156
8/20/2012	" "	" "	0	0	3,686	18,842
8/21/2012	" "	" "	0	0	2,310	21,152
8/22/2012	" "	" "	0	0	2,084	23,236
8/24/2012	Seine	Port Graham	0	0	1,522	24,758[d]

Hatchery escapement summary in numbers of fish[c, e]	
Cost Recovery Harvest [b]	714
Raceway harvest	0
Viable broodstock (spawned,eggs in incubators)	23,039
Unviable broodstock (green/over-ripe/bad)	1,356
Unspawned fish (e.g. excess males/females)	3,422
Holding mortalities (raceway, pen mortalities)	4,367
Total hatchery harvest	32,898
Sales summary	
Whole fish sales	714
Raceway sales	0
Carcass sales	0
Total sales	714

[a] From ADF&G fish ticket database.

[b] Incidental catch during sockeye salmon cost recovery harvest.

[c] Releases of pink salmon from the Tutka Bay Lagoon Hatchery (TBLH) ended in 2004 and from the Port Graham Hatchery (PGH) in 2007. The Tutka Bay and Port Graham fish listed were harvested from wild returns to Tutka Bay Lagoon Creek and Port Graham River and will be used to seed TBLH and PGH respectively.

[d] Number of pink salmon reported on fish tickets was 19,918.

[e] Data from CIAA (2012) and ADF&G fish ticket database.

Appendix F4.–Estimated historical harvest contributions, and total return of sockeye salmon to greater Cook Inlet hatchery release sites, 1978–2012.

Return Year	Hatchery Contrib. to the CCPF [a]	Hatchery Contrib. to Sub. Harvest	Hatchery Contrib. to PU Harvest	Hatchery Contrib. to Sport Harvest	Hatchery Contrib. to Broodstock Esc. [a]	Hatchery Contrib. to Cost Recov.	Total Hatchery Return
1978	0	0	0	0	0	0	0
1979	299,858	0	1	0	3,974	0	303,833
1980	638,058	0	0	0	30,927	0	668,985
1981	358,726	0	34	0	9,700	0	368,460
1982	23,990	0	175	1,770	19,283	0	45,218
1983	151,400	0	0	6,400	16,103	0	173,903
1984	231,444	0	228	5,286	50,800	0	287,758
1985	415,493	0	25	13,334	179,400	0	608,252
1986	808,503	0	22	21,007	12,020	0	841,552
1987	521,349	0	485	16,214	34,600	0	572,648
1988	676,669	0	628	8,293	594	0	686,184
1989	251,532	0	5,300	8,700	12,000	78,731	356,263
1990	370,195	0	4,143	3,500	2,708	8,513	389,059
1991	479,910	0	6,712	13,260	86,650	3,604	590,136
1992	378,823	0	7,250	1,000	24,103	9,198	420,374
1993	459,756	0	10,250	5,600	38,231	37,620	551,457
1994	205,837	0	0	3,000	17,655	51,140	277,632
1995	260,844	2,600	7,000	4,190	6,010	63,404	344,048
1996	348,846	3,000	9,000	2,584	5,455	76,272	445,157
1997	184,409	2,142	4,900	750	1,645	90,464	284,310
1998	110,659	0	15,000	57	3,561	81,889	211,166
1999	968,473	2,564	35,750	31,333	16,317	182,311	1,236,748
2000	216,149	2,500	19,228	6,039	17,681	94,666	356,263
2001	656,309	3,500	19,206	75,950	17,773	67,786	840,524
2002	754,609	9,799	62,895	33,906	19,744	85,830	966,783
2003	1,080,584	0	70,618	10,398	20,311	124,388	1,306,299
2004	1,112,259	4,000	78,753	15,816	11,167	29,943	1,251,938
2005	924,377	0	86,032	12,137	7,379	74,673	1,104,598
2006	382,433	0	26,000	13,750	14,600	77,590	514,373
2007	345,027	0	24,300	10,750	12,754	57,305	450,136
2008	134,226	500	6,717	7,767	7,658	88,836	245,704
2009	26,798	700	9,630	12,908	10,403	174,980	235,419
2010	78,645	0	20,828	15,314	10,214	69,833	194,834
2011	94,153	0	8,553	29,067	7,572	159,860	299,205
Prev. 10-yr avg.	493,311	1,500	39,433	16,181	12,180	94,324	656,929
2012	19,425	0	0	12,269	12,035	114,593	158,322

Source: Harvest estimates of hatchery fish are from CIAA (2012).

[a] CCPF - Commercial Common Property Fleet.

Appendix F5.–Estimated historical harvest contributions, and total return of coho salmon to greater Cook Inlet hatchery release sites, 1968–2012.

Return year[a]	Commercial common property	Subsistence harvest	Personal use harvest	Sport harvest[c]	Cost recovery	Broodstock harvest
1968[b]	–	–	–	–	–	–
1969	–	–	–	–	–	–
1970	–	–	–	–	–	–
1971	–	–	–	–	–	–
1972	–	–	–	–	–	–
1973	–	–	–	–	–	–
1974	–	–	–	–	–	–
1975	–	–	–	–	–	–
1976	–	–	–	–	–	–
1977	–	–	–	–	–	–
1978[c]	0	0	0	0	0	100
1979	0	0	0	0	0	7,089
1980	0	0	0	0	0	6,376
1981	0	0	0	150	0	0
1982	0	0	0	2,509	0	0
1983	–	–	–	–	–	–
1984	0	0	0	1,700	0	4,620
1985	0	0	0	1,362	0	5,335
1986	600	0	0	6,423	0	1,938
1987	0	0	0	13,800	0	300
1988	0	0	0	6,000	0	0
1989	0	0	0	7,340	0	0
1990	0	0	1,600	8,500	5,855	0
1991	0	0	800	17,940	6,035	0
1992	0	0	800	4,687	1,234	689
1993	0	0	0	10,529	7,199	678
1994	0	0	0	1,600	4,967	731
1995	–	–	–	–	–	–
1996	0	0	0	1,500	723	608
1997	0	0	0	4,066	2,690	594
1998	0	0	0	4,665	9,905	780
1999	0	0	0	2,500	2,499	939
2000	3,000	0	2,135	50,900	5,370	976
2001	0	0	0	1,000	1,754	644
2002	0	0	0	40,901	2,352	1,044
2003	0	0	0	60,566	2,228	1,234
2004	0	0	0	58,255	1,224	972
2005	0	0	0	61,979	1,536	953
2006	0	0	0	28,656	600	754
2007	48	0	0	32,794	0	608
2008	0	0	0	19,477	350	525
2009	0	0	0	17,971	0	483
2010	0	0	0	26,043	0	452
2011	0	0	0	20,697	0	454
2012	0	0	0	NA	0	578[d]

Note: Harvest estimates of hatchery fish are from CIAA (2012).

[a] Return locations documented were Bear Lake, Fritz Creek, Halibut Cove Lagoon, Grouse Lake, Caribou Lake, Homer Spit, Resurrection Bay and Seldovia.

[b] Releases of hatchery coho salmon in LCI began in 1966. No documentation of returns prior to 1978.

[c] Includes CIAA Trail Lake Hatchery production and F&G Ship Creek Complex production.

[d] Hatchery broodstock final total of 578 is, 327 Trail Lake Hatchery + 68 ADFG hatchery +183 excess males.

Appendix F6.–Estimated historical harvest contributions and total returns of pink salmon to greater Cook Inlet hatchery release sites, 1978–2012.

Return Year	Brood Year	Fry Release	Hatchery Contribution to the CCPF	Hatchery Contribution Subs. Harvest	Hatchery Contribution PU Harvest	Hatchery Contribution Sport Harvest	Hatchery Contribution Cost Recovery	Hatchery Contribution Broodstock Esc.	Total Hatchery Return	Estimated Marine Survival
1978	1976	318,280	0	0	0	0	0	3,700	3,700	1.16%
1979	1977	4,820,937	0	0	0	0	0	369,000	369,000	7.65%
1980	1978	9,243,717	0	0	0	0	0	315,000	315,000	3.41%
1981	1979	6,795,244	963,350	0	0	5,640	0	47,279	1,016,269	14.96%
1982	1980	10,268,753	181,400	0	0	2,000	0	4,400	187,800	1.83%
1983	1981	15,475,435	577,200	0	0	4,900	0	0	582,100	3.76%
1984	1982	15,232,750	230,000	0	0	8,000	0	0	238,000	1.56%
1985	1983	18,142,463	463,600	0	0	8,000	0	0	471,600	2.60%
1986	1984	23,818,500	380,135	0	0	8,030	55	50	388,270	1.63%
1987	1985	26,265,176	84,500	0	0	650	0	0	85,150	0.32%
1988	1986	8,278,967	836,000	0	0	14,030	0	0	850,030	10.27%
1989	1987	15,589,360	877,600	0	0	20,700	0	0	898,300	5.76%
1990	1988	36,977,190	167,400	0	0	2,800	0	0	170,200	0.46%
1991	1989	36,974,370	204,800	0	0	3,661	0	0	208,461	0.56%
1992	1990	30,602,576	97,577	0	0	4,500	276,000	69,000	447,077	1.46%
1993	1991	33,760,487	228,376	0	0	7,200	409,431	102,000	747,007	2.21%
1994	1992	48,700,000	604,037	0	0	5,500	959,064	153,966	1,722,567	3.54%
1995	1993	62,395,000	1,210,572	900	0	3,000	1,213,322	182,348	2,610,142	4.18%
1996	1994	63,358,000	19,510	1,000	0	1,000	423,306	140,152	584,968	0.92%
1997	1995	111,469,975	172,262	5,000	0	5,000	2,465,108	188,197	2,835,567	2.54%
1998	1996	89,918,000	507,850	0	0	1,929	787,538	175,468	1,472,785	1.64%
1999	1997	90,000,000	222,228	0	0	2,000	857,902	151,903	1,234,033	1.37%
2000	1998	64,797,691	8,580	0	0	2,000	1,043,705	269,808	1,324,093	2.04%
2001	1999	66,287,812	108,735	0	0	2,000	421,530	198,148	730,413	1.10%
2002	2000	126,635,207	9,791	0	0	0	1,041,529	252,777	1,304,097	1.03%
2003	2001	105,971,985	2,924	266	0	1,500	616,155	261,457	882,302	0.83%
2004	2002	125,167,000	1,523	5,000	0	1,500	2,459,189	117,222	2,584,434	2.06%
2005	2003	84,247,031	4,779	0	0	0	2,138,538	84,088	2,227,405	2.64%
2006	2004	26,567,983	5,000	0	0	0	246,781	27,741	279,522	1.05%
2007	2005	13,883,682	0	8,000	0	0	112,801	0	120,801	0.87%
2008	2006	13,282,049	0	0	0	0	0	0	0	
2009	2007	0	0	0	0	0	0	0	0	
2010	2008	0	0	0	0	0	0	0	0	
2011	2009	0	0	0	0	0	0	0	0	
2012	2010	0	0	0	0	0	0	0	0	

Note: Harvest estimates of hatchery fish are from CIAA (2012). CCPF - Commercial Common Property Fleet.

Appendix F7.–Tutka Bay Lagoon Hatchery salmon releases, 1977–2012.

Year released	Sockeye	Pink	Chum
1977	91,347 [a]	318,280 [a]	
1978	400,000 [a]	4,820,937 [a]	
1979		9,243,717 [a]	597,377 [a]
1980		6,795,244 [a]	
1981		10,268,753 [a]	7,992 [a]
1982		15,475,435 [a]	15,440 [a]
1983		15,232,750 [a]	1,117,745 [a]
1984		18,142,463 [a]	140,500 [a]
1985		23,537,000 [a]	25,977 [a]
1986		26,234,600 [a]	18,000 [a]
1987		8,240,700 [a]	445,700 [a]
1988		15,589,360 [a]	3,211,200 [a]
1989		36,977,190 [a]	2,164,393 [a]
1990	355,347 [a]	36,684,662 [a]	1,508,557 [a]
1991		30,000,000 [a]	
1992		31,950,000 [a]	
1993		48,700,000 [a]	
1994		61,100,000 [a]	
1995		63,000,000 [a]	
1996	75,000 [a]	105,000,000 [a]	
1997	245,000 [a]	89,000,000 [a]	
1998		90,000,000 [a]	
1999	100,000 [a]	60,132,000 [a]	
2000		65,120,870 [a]	
2001		99,336,410 [a]	
2002		99,371,000 [a]	
2003		67,967,000 [a]	
2004		47,964,360 [a]	
2005	[b]		
2006	[b]		
2007	[b]		
2008	[b]		
2009	[b]		
2010	[b]		
2011	[b]		
2012	[b]	11,246,349 [a]	

[a] No thermal marking.

[b] Sockeye salmon fry reared and thermally marked at Trail Lakes Hatchery, remote released as smolt at Tutka Bay Hatchery. Release numbers are included in releases for Trail Lakes Hatchery.

Appendix F8.–Trail Lakes Hatchery salmon releases, 1983–2012.

Year released	Chinook	Sockeye	Coho	Chum
1983		2,310,751	1,039,673	
1984	406,755	1,236,864	1,283,815	
1985	398,586	1,805,792	1,538,361	455,809
1986	217,648	516,000	1,530,116	
1987	268,399	3,718,311	1,702,446	
1988	98,429	9,074,486	945,999	
1989		5,690,000	1,337,340	
1990		7,679,698	840,585	
1991		6,345,252 [a]	390,841	
1992		7,575,637 [a]	255,533	
1993		7,979,820 [a]	620,588	
1994		6,640,000 [a]	320,000	
1995		6,339,485 [a]	516,400	
1996		4,110,638 [a]	75,000	
1997		10,857,470 [a]	601,700	
1998		7,653,000 [a]	409,000	
1999		9,923,500 [a]	357,000	
2000		12,521,000 [a]	418,000 [b]	
2001		1,140,000 [a]	432,000 [b]	
2002		18,907,200 [a]	528,500 [b]	
2003		16,128,000 [a]	761,000 [b]	
2004		17,272,000 [a]	996,000 [b]	
2005		9,959,000 [a]	988,000 [b]	
2006		5,785,000 [a]	1,146,000 [b]	
2007		12,668,800 [a]	956,000 [b]	
2008		13,203,000 [a]	685,000 [b]	
2009		7,953,000 [a]	382,000 [b]	
2010		8,616,000 [a]	435,000 [b]	
2011		9,324,200 [a]	437,000 [b]	
Previous 10-year average		11,981,620	731,450	
2012		7,636,300 [a]	315,000 [b]	

[a] Thermal marking of sockeye salmon releases began in 1991, (BY 1990).

[b] Thermal marking of coho salmon releases began in 2000, (BY 1999).

Appendix F9.–Eklutna Hatchery salmon releases, 1983–1998.

Year released	Sockeye	Coho	Pink	Chum
1983		1,318		1,536,892
1984		87,944		928,143
1985		43,500	281,500	
1986		101,282	30,576	1,693,382
1987		147,682	38,267	2,740,773
1988		72,881		2,697,860
1989		50,775		6,121,337
1990		54,278		3,209,773
1991		21,285		2,535,335
1992		131,829		3,114,793
1993	869,000	108,070		
1994	5,000,000	62,400		
1995	6,200,000	60,967		
1996	5,000,000	69,176		
1997	8,768,000	69,000		
1998	9,564,000	108,000		

Note: No thermal marking on any salmon fry reared at this facility.

Appendix F10.–Crooked Creek Hatchery salmon and steelhead trout releases, 1977–1996.

Year released	Chinook	Sockeye	Coho	Steelhead
1977	92 [a]	4,193,011 [a]		
1979		8,028,759 [a]	10,740 [a]	
1980		5,738,492 [a]		
1981		10,968,002 [a]		
1982		17,476,038 [a]		
1983	53,782 [a]	19,048,111 [a]		
1984	67,800 [a]	19,160,000 [a]		
1985	54,087 [a]	11,884,760 [a]	102,356 [a]	27,429 [a]
1986	69,168 [a]	17,471,312 [a]	85,410 [a]	
1987		20,030,600 [a]	175,249 [a]	70,159 [a]
1988		14,706,400 [a]	131,810 [a]	11,600 [a]
1989		15,185,000 [a]	70,772 [a]	24,808 [a]
1990		15,513,500 [a]	381,790 [a]	106,959 [a]
1991	273,500 [a]	12,650,000 [a]	302,123 [a]	68,948 [a]
1992	273,123 [a]	13,312,000 [a]	224,000 [a]	39,677 [a]
1993	286,560 [a]	11,900,000 [a]	221,700 [a]	
1994	225,819 [a]	208,000 [a]	126,021 [a]	
1995		11,164,000		
1996		11,074,605		

[a] No thermal marks prior to 1995.

Appendix F11.–Port Graham Hatchery salmon releases, 1991–2012.

Year	Sockeye	Coho	Pink
1991	84,757 [a]	0	255,000 [a]
1992	144,982 [a]	0	1,810,487 [a]
1993	194,700 [a]	0	0
1994	830,159 [a]	0	1,295,000 [a]
1995	0	0	358,000 [a]
1996	292,134 [a]	0	6,469,975 [a]
1997	199,000 [a]	29,963 [a]	918,000 [a]
1998	0	0	0
1999	918,348 [a]	0	4,617,362
2000	906,057 [a]	0	1,142,726
2001	0	0	27,298,797
2002	0	0	6,600,985
2003	694,647	0	57,200,000
2004	159,616	0	36,282,671
2005	203,000	0	26,567,983
2006	422,060	0	13,883,682
2007	0	0	13,282,049
2008	0	0	0
2009	0 [b]	0	0
2010	0	0	0
2011	0	0	0
2012	0	0	0

[a] No thermal marks.

[b] The 112,000 sockeye salmon released in 2009 at PGH were of English Bay Lake stock and were reared at the Trail Lakes Hatchery (TLH).

Appendix F12.–Fort Richardson and Elmendorf state fish hatcheries combined hatchery salmon fry releases, 1966–2012.

Year	Chinook	Coho
1966	166,874 [a]	0
1967	538,356 [a]	38,200 [a]
1968	82,400 [a]	199,700 [a]
1969	95,900 [a]	264,000 [a]
1970	45,700 [a]	225,400 [a]
1971	217,390 [a]	92,343 [a]
1972	71,814 [a]	87,700 [a]
1973	166,134 [a]	683,685 [a]
1974	212,540 [a]	210,300 [a]
1975	91,100 [a]	281,800 [a]
1976	513,400 [a]	895,200 [a]
1977	351,952 [a]	775,803 [a]
1978	747,629 [a]	617,822 [a]
1979	1,088,542 [a]	1,471,899 [a]
1980	770,235 [a]	602,394 [a]
1981	391,950 [a]	1,553,864 [a]
1982	0	1,096,569 [a]
1983	578,441 [a]	424,542 [a]
1984	1,021,553 [a]	831,147 [a]
1985	1,727,379 [a]	660,854 [a]
1986	1,474,079 [a]	1,991,102 [a]
1987	869,520 [a]	731,202 [a]
1988	1,624,351 [a]	1,333,453 [a]
1989	3,008,315 [a]	1,970,126 [a]
1990	2,256,778 [a]	1,281,500 [a]
1991	1,693,355 [a]	1,215,136 [a]
1992	1,765,804 [a]	1,329,869 [a]
1993	1,863,391 [a]	1,196,020 [a]
1994	1,709,950 [a]	994,250 [a]
1995	1,695,164 [a]	1,121,768 [a]
1996	1,899,284 [a]	1,042,477 [a]
1997	1,801,410 [a]	1,136,845 [a]
1998	1,531,021 [a]	1,249,781 [a]
1999	1,340,334 [a]	1,113,016 [a]
2000	2,173,708 [a]	0
2001	1,353,660 [a]	1,226,342 [a]
2002	1,080,114	1,273,443
2003	2,203,046	944,706
2004	1,958,790	1,221,608
2005	2,334,649	1,457,233
2006	1,922,667	1,235,317
2007	2,067,938	1,193,374
2008	1,309,790	989,853
2009	1,205,594	1,168,549
2010	2,006,157	1,336,861
2011	1,741,377	617,466
Previous 10-year average	1,783,012	1,187,095
2012	1,853,150	968,716

[a] No thermal marks.

Appendix F13.–Big Lake Hatchery salmon production, 1977–1993.

Year	Chinook	Sockeye	Coho
1977	56,100	7,680,700	40,700
1978		8,142,465	418,775
1979		0	625,143
1980		1,428,698	760,822
1981		4,704,730	455,397
1982		5,281,866	964,837
1983		7,715,937	2,034,544
1984		7,382,330	2,076,058
1985		12,426,199	3,194,538
1986		15,057,683	2,986,852
1987		11,719,972	2,658,141
1988		14,301,329	7,504,439
1989		13,205,848	82,774
1990		10,815,340	3,274,101
1991		10,292,327	458,672
1992		4,609,280	288,196
1993		6,874,392	882,151

Note: No thermal marking on any salmon fry reared at this facility.

Appendix F14.–Fire Lake Hatchery salmon production, 1964–1979.

Year	Chinook	Sockeye	Coho	Pink
1964				
1965				
1966	2,840		512,720	
1967			965,400	
1968		146,000	648,800	
1969			577,400	
1970		120,000	1,014,500	
1971			349,848	
1972	109,100	17,000	1,569,000	
1973		192,000	1,060,285	
1974	210,500	1,410,500	1,198,900	13,400
1975	100,900		2,696,000	
1976	1,207,600		2,462,800	
1977	2,531,786		2,624,393	
1978	864,041		2,282,151	
1979				

Note: No thermal marking on any salmon fry reared at this facility.

Appendix F15.–Historic releases of Chinook salmon from hatcheries to Lower Cook Inlet, 1972–2012.

	Southern District (241)						Eastern District (231)					
Year	Halibut Cove Lagoon	Homer Spit	Tutka Bay	Kasitsna Bay	Seldovia Harbor	English Bay Lakes	Seward Lagoon	Resurrection Bay	Thumb Cove	Box Canyon	Lowell Creek	Spring Creek
1972				33,800								
1975	3,463											
1976	16,183		26,000							25,100		
1977	49,947									50,036		
1978	126,306									150,488		
1979	224,708									218,499		
1980	155,054											
1981	101,861											
1983	200,900									54,521		
1984	84,000	88,753							71,427		39,206	
1985	98,000	152,226					53,587				132,708	
1986	101,331	103,946									100,900	
1987	94,100	103,860			80,420						95,963	
1988	93,874	219,572			111,435		109,020				95,673	
1989	115,682	212,737			108,300		109,464				122,800	75,063
1990	112,458	210,087			98,525	109,465	112,831				216,220	
1991	92,363	190,915			91,592		373,165				93,200	
1992	117,850	353,255			112,935		261,803				108,390	
1993	100,228	312,292			106,497		193,742				104,870	
1994	98,872	320,836			107,246		165,596				104,477	
1995	37,577	339,074			116,165		220,146				95,256	
1996	97,729	312,289			118,274		300,000				115,000	
1997	78,133	318,706			103,757		98,052				219,355	
1998	65,893	289,830			69,461		205,133				101,992	
1999	79,221	222,781			74,057		88,066				85,502	
2000	83,277	219,984			68,114		212,873				109,461	
2001	106,719	208,062			102,793		113,147				114,748	
2002	106,279	190,026			83,045		100,314				93,296	
2003	106,844	206,292			107,521		109,976				110,331	
2004	103,771	168,743			88,682		109,600	16,680			89,388	
2005	112,521	220,822			114,984		114,847	96,702			100,088	
2006	117,549	224,053			113,974		226,621	76,596				
2007	54,560	226,972			54,276			117,842				
2008	58,674	212,141			54,464		13,858	128,611				
2009	35,065	164,234			44,487							
2010	111,134	213,503			114,421		110,671				109,779	
2011	107,338	219,787			103,382		223,881					
Previous 10-yr avg.	91,374	204,657			87,924		126,221	87,286			100,576	
2012	110,253	221,547			95,800		219,743					

Appendix F16.–Historic releases of Chinook salmon from hatcheries to Upper Cook Inlet drainages, 1966–2012.

	Kenai Peninsula drainage, (244-20,-30, -70)							Susitna drainage, (247-41, -60)						Matanuska drainage, (247-50)				Turnagain Arm drainage (247-60)	
Year	Cooper Lake	Crooked Creek	Deep Creek	Kenai River	Killey River	Ninilchik River	Twin Falls Creek	Bench Creek	Deshka River	Moose Creek	Montana Creek	Sheep Creek	Willow, Deception and Anderson combined	Meadow Creek	Ship Creek	Eagle River	Eklutna Tailrace	Granite Creek	Six-mile Creek
1966															166,874				
1967															538,356				
1968															82,400				
1969															95,900				
1970															45,700				
1971													30,690		186,700				
1972															71,814				
1973															160,134				
1974															204,000				
1975		3,679													83,500				
1976		82,400													63,500				
1977		131,492												56,100	170,516				
1978		172,515													274,539				
1979		379,478																	
1980		51,998													201,258				
1981		206,114																	
1983		264,782																	
1984	125,586	263,329		38,413											328,318				230,181
1985		229,323		66,907	5,102								534,447						230,206
1986		253,624			4,952			40,076					441,258					93,429	
1987		206,179						77,677							53,212			72,322	
1988		239,593		90,105		248,586					132,503	132,125	201,091		175,156			98,429	130,578
1989		335,095				200,203					200,179	208,170	240,885		120,670				
1990		234,019				215,804							655,491		102,523				
1991		239,653				87,992							391,669		211,268	102,100			
1992		229,017				132,387							179,724		176,380	107,695			

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	Kenai Peninsula drainage, (244-20,-30, -70)							Susitna drainage, (247-41, -60)						Matanuska drainage, (247-50)				Turnagain Arm drainage (247-60)	
Year	Cooper Lake	Crooked Creek	Deep Creek	Kenai River	Killey River	Ninilchik River	Twin Falls Creek	Bench Creek	Deshka River	Moose Creek	Montana Creek	Sheep Creek	Willow, Deception and Anderson combined	Meadow Creek	Ship Creek	Eagle River	Eklutna Tailrace	Granite Creek	Six-mile Creek
1993		274,268		153,617		184,585	100,000						160,194		217,557	121,066			
1994		224,784	13,301	88,726		201,513							177,913		199,830	107,547			
1995		184,049	13,774	60,029		54,902							167,643		218,487				
1996		193,180	8,967	6,538		51,686			1,498				216,558		231,444				
1997		223,200	7,454	19,455	12,750	50,698			16,113	970			335,102		326,371				
1998		137,338		10,397	6,201	48,798							298,624		204,742				
1999		192,304			47,478	49,853							201,586		197,168				
2000		108,507				51,298							206,496		265,582				
2001		109,202				54,770							207,465		254,924				
2002		99,548				54,631							197,277		290,501		106,991		
2003		98,800				47,997							101,181		329,416		218,492		
2004		80,601				51,303							212,570		320,226		215,165 [a]		
2005		113,613				55,229							163,016		358,029		164,586 [a]		
2006		111,705				57,537							50,426		176,055		213,250		
2007		111,382				56,368							103,016		333,940		110,978		
2008		114,588				56,943							112,219		341,495		114,136		
2009		115,035				54,845							111,322		282,735		77,785		
2010		106,145				58,297							155,125		332,597		152,014		
2011		64,578				59,462							140,266		314,194		122,962		
2012		52,759				54,780							151,220		329,082		160,347		

[a] Eklutna River.

Appendix F17.–Historic releases of sockeye salmon from hatcheries to Lower Cook Inlet, 1976–2012.

	Southern District						Outer	Kamishak District					Eastern District		
Year	Leisure Lake	Hazel Lake	Halibut Cove Lagoon	Tutka Bay Lagoon	English Bay Lakes	Port Graham Subdistrict	Port Dick Lake	Chenik Lake	Paint River Lakes	Kirschner Lake	Bruin Lake	Ursus Lake	Bear Lake	Resurrection Bay	Grouse Lake
1976	1,085		7,777												
1977	91,347														
1978	83,422							98,082							
1979								256,525							
1980	532,650														
1981	1,094,713							1,096,718							
1982	1,527,876														
1983	2,113,239														
1984	2,110,000														
1985	2,018,000														
1986	2,250,303							839,000	820,026						
1987	2,022,000						704,900	1,005,000		866,700					
1988	2,100,000	783,000					221,700	2,601,000	2,207,300	521,000					
1989	2,000,000	1,000,000					430,000	3,500,000	2,000,000	250,000					
1990	2,000,000	1,500,000			855,347			3,250,000	2,000,000	250,000			2,577,962		
1991	2,000,000	1,300,000			255,071	84,757		2,100,000	750,000	250,000	250,000		1,604,922		
1992	2,000,000	1,000,000			290,298	144,982		2,750,000	750,000	250,000	250,000	250,000	1,482,489		
1993	2,000,000	1,000,000			755,692			1,400,000	750,000	250,000	250,000	250,000	1,810,261		
1994					820,174	9,985				208,000			170,000		570,000
1995	1,632,000	1,061,000						1,129,000	588,000	251,000	251,000	252,000	330,000		993,000
1996	1,490,000	1,030,000		75,000	292,134			951,000	500,000	250,000	250,000	250,000	780,638		217,605
1997	2,000,000	1,000,000		245,000	199,000					250,000			788,000		2,428,000
1998	1,877,000	1,218,000								234,000			772,000		1,514,000
1999	265,400	453,100		100,000	918,348					172,700			1,380,000		
2000	1,708,000	1,248,000			906,057					249,000			1,796,000		
2001	89,000												145,000		
2002	2,246,200	1,280,100							507,700	301,500			3,210,300		
2003	2,240,000	1,547,000			694,647					298,000			1,801,000		
2004	2,002,000	351,000			50,096	109,520				251,000			3,012,000		
2005	2,252,000	1,558,000		96,000	203,000					316,000			3,422,000		
2006	680,000			260,000		422,060							3,393,000		
2007	2,315,000	1,411,000		143,800						254,000			3,056,000		
2008	2,053,000	1,161,000		483,000	246,000					300,000			2,400,000	1,600,000	
2009	1,225,000	1,186,000		301,000		112,000							2,543,000	1,675,000	
2010	1,933,000	1,218,000		278,000	202,000					255,000			2,200,000	1,650,000	
2011	1,415,000	1,244,000		281,900	203,300					160,000			2,488,000	0	
2012	2,074,000	1,240,000		371,300	213,000					300,000			2,490,000	1,305,000	

Appendix F18.–Historic releases of sockeye salmon from hatcheries to Upper Cook Inlet, 1973–2012.

	Upper Cook Inlet, Kenai Peninsula (244-30, 246-20)						Matanuska Drainage (247-50)				Susitna drainage (247-41)	
Year	Coal Creek	Crooked Creek	Hidden Lake	Quartz Creek	Tustumena Lake	Packers Creek Lake	Big Lake system	Blodgett Lake	Chelatna Lake	Eklutna River	Nancy Lake	Susitna River
1973		192,000										
1976												
1977			330,318				9,338,493					
1978			602,558		400,000		2,141,868				2,102,064	
1979			8,256		7,763,978							
1980					5,205,842						1,363,398	
1981					8,776,571		3,567,878				1,473,578	
1982					15,948,162			1,176,889			2,037,024	
1983			1,085,279	1,225,472	16,934,872			2,386,633			2,229,056	18,652
1984			1,236,864		17,050,000							14,969
1985			1,805,792		9,866,760			2,096,584				11,795
1986					13,561,983							
1987			3,718,311		15,432,000							
1988			6,085,307		6,272,400	2,989,179	281,000					
1989			2,400,000		6,005,000	3,290,000						
1990			1,747,900		6,013,500	2,850,000			503,836			
1991			1,600,000		6,000,000	2,505,500	10,037,256		634,830			
1992	66,388		1,716,116		6,062,000	3,172,439	535,000	1,196,000	1,138,205			
1993			1,901,257		6,000,000	3,265,631	319,000	921,000	1,002,671	869,000		
1994			1,800,000			2,770,000	2,000,000		1,330,000			
1995	158,485		1,700,000		6,000,000	1,552,000		2,000,000	1,806,000	1,000,000		
1996			1,600,000		6,136,000	688,000		2,000,000	1,042,000			
1997			1,501,000		6,013,000	627,470		1,118,000		1,000,000		
1998			1,035,000		4,558,000			2,000,000		1,009,000		
1999			1,507,000		5,948,300		197,000					
2000			1,242,000		5,432,000							
2001			906,000									
2002			980,100		6,065,400							
2003			629,000		6,024,000							
2004			646,000		6,006,000							
2005			573,000									
2006			582,000									
2007			658,000									
2008			917,000									
2009			911,000									
2010			880,000									
2011			1,044,000									
2012			948,000									

Appendix F19.–Historic releases of coho salmon from hatcheries to Lower Cook Inlet, 1963–2012.

	Southern District, (241)								Eastern District, (231)								
Year	Caribou Lake	Fritz Creek	Halibut Cove Lagoon	Homer Spit	Kasitsna Bay Creek	Seldovia Harbor	Seldovia Lake	Port Graham Subdistrict	Resurrection Bay	Seward Lagoon	Bear Creek	Bear Lake	Grouse Creek	Grouse Lake	Box Canyon Creek	Lowell Creek	Total coho salmon released
1963												148,057					148,057
1964												43,000					43,000
1965												69,800					69,800
1966												360,100					360,100
1967												246,400					246,400
1968										42,400							42,400
1969										27,100	47,900						75,000
1970										38,600	6,400				3,200		48,200
1971										10,900	50,983						61,883
1972					241,400						155,500	450,600					847,500
1973										30,200		443,300					473,500
1974			307,904							100,100		450,800					858,804
1975	141,217		7,100							100,700		449,900					698,917
1976	155,700		162,338			50,285	62,376			100,600	35,600	224,600		35,200			826,699
1977			7,209				99,380			100,456	35,102	10,800		35,003			287,950
1978		66,545								148,999	28,574	225,820	53,555				523,493
1979		44,717	47,810	23,015						98,566	40,503	225,460		44,010			524,081
1980		21,315								100,906		150,011		50,286			322,518
1981		55,006								109,958		246,545		54,953			466,462
1982										53,970		227,800		13,238			295,008
1983										48,000	50,000	198,801					296,801
1984	119,071						59,840			40,687		220,000		34,100			473,698
1985	139,789	31,242					81,924			50,256		300,446		56,134			659,791
1986	137,951						71,496			174,452	17,200	445,693			53,607		900,399
1987	150,000						45,000			65,514	23,997	226,300			257,461	57,232	825,504
1988	150,000			62,547			80,000			118,741		347,155				63,806	822,249
1989				153,869						152,159		981,340				66,606	1,353,974
1990	180,000			122,945			50,000			145,619	93,694	746,891				63,733	1,402,882
1991	180,000			100,236			50,000			119,057		390,841				30,400	870,534
1992	150,000			100,570						98,700		255,533					604,803

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	Southern District, (241)								Eastern District, (231)								
Year	Caribou Lake	Fritz Creek	Halibut Cove Lagoon	Homer Spit	Kasitsna Bay Creek	Seldovia Harbor	Seldovia Lake	Port Graham	Resurrection Bay	Seward Lagoon	Bear Creek	Bear Lake	Grouse Creek	Grouse Lake	Box Canyon Creek	Lowell Creek	Total coho salmon released
1993	150,000			116,129						159,091		620,588				64,361	1,110,169
1994	63,600			156,213						221,577		320,000				38,000	799,390
1995				110,701						133,700	7,400	509,000				50,698	811,499
1996				149,000						182,000		75,000				69,000	475,000
1997				120,242				29,963		144,112	153,000	448,700				61,687	957,704
1998				130,219						74,365		409,000				65,687	679,271
1999				129,602						109,142	51,000	306,000				62,580	658,324
2000				122,338						145,693	102,000	316,000				54,184	740,215
2001				225,042						124,703	121,000	311,000				125,618	907,363
2002				216,355						121,743	123,800	404,700				119,512	986,110
2003				325,735						123,718		658,000				124,389	1,231,842
2004				243,243					192,000	131,798	285,000	406,000				131,989	1,390,030
2005				220,707						132,229		893,000				132,276	1,378,212
2006				449,216		114,000				131,326		562,000				277,261	1,533,803
2007				228,244		97,000				132,811		758,000				130,892	1,346,947
2008				217,843		88,000				233,365		502,000					1,041,208
2009				157,696						91,979		338,000				91,833	679,508
2010				130,206						134,008		435,000				133,947	833,161
2011				129,080						255,252		437,000					821,332
Previous 10-year avg.				231,833		99,667				148,823		539,370				142,762	1,124,215
2012				107,250						249,309		315,000					671,559

Appendix F20.–Historic releases of coho salmon from hatcheries to Upper Cook Inlet drainages, 1967–2012.

Upper Cook Inlet, Kenai Peninsula drainages, (244-20, -30)												
Year	Deep Creek	Crooked Creek	Grant Lake	Grant Lake Outlet	Hidden Creek	Kenai River	Moose River	Quartz Creek	Skilak Lake	Tern Lake	Tern Lake & Quartz Creek	Upper Russian Lake
1967												
1968												
1969												
1970												
1971												
1972												
1973												
1974												
1975		5,259										
1976												
1977						7,986						
1978												
1979		10,740										
1980												
1981												
1982												
1983		119,996	517,904					38,200			37,000	27,327
1984			699,041	1,119				37,590		37,068		
1985		102,356	545,566					38,380		38,287		
1986		155,794	230,124									
1987		521,140										
1988		350,485										
1989		426,772										
1990		71,790										
1991		72,123							14,397			
1992		74,000			21,686	1,802	75,278		18,424			
1993		71,700			22,131		100,206					
1994		62,421					171,563					
1995	9,681						94,771					
1996	4,868						98,032					
1997	6,951						96,486					
1998							101,133					
1999							114,885					
2000							103,319					
2001	2,540						147,931					
2002	7,415						108,520					
2003	2,666						120,305					
2004							83,674					
2005							79,932					
2006							81,953					
2007							81,482					
2008												
2009												
2010												
2011												
2012												

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Susitna drainages, (241-41)													
Year	Little Susitna River	Butterfly Lake	Caswell Creek	Delyndia Lake	Deshka River	Finger Lake	Hock Lake	Horseshoe Lake	My Lake	Nancy Lake	Nancy Lake & Little Susitna	Papoose Twins Lake	Yohn Lake
1967													
1968													
1969													
1970													
1971													
1972													
1973													
1974													
1975													
1976													
1977													
1978													
1979													
1980													
1981													
1982	2,950												
1983										287,343			
1984										672,800			
1985		119,000		49,000		232,000		454,600		356,732			
1986										1,096,889			
1987			31,767								302,055		
1988		141,000	9,000	141,000			72,000	465,725	58,000	4,069,965		336,000	46,000
1989	49,349		161,822					8,400		642,394			
1990	1,269,569		143,102							202,197			
1991			155,529							277,762			
1992	312,925												
1993										279,873			
1994										126,694			
1995										151,985			
1996					13,368								
1997													
1998													
1999													
2000													
2001													
2002													
2003													
2004													
2005													
2006													
2007													
2008													
2009													
2010													
2011													
2012													

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Matanuska drainages, (247-50)

Year	Big Lake System	Blodgett Lake	Chester Creek	Cottonwood & King Lakes	Cottonwood Creek & Lake	Eklutna River & Tailrace	Fish Creek	Jim Creek	McRoberts Creek	Meadow Creek	Ship Creek	Six Mile Lake
1967	8,200											
1968					86,900						129,300	
1969											112,400	10,000
1970											177,200	
1971			60								30,400	
1972											87,700	
1973											77,100	
1974											90,500	
1975											106,100	
1976											121,700	20,000
1977	40,700											51,600
1978	41,429	12,191			97,120		24,099				111,054	20,100
1979					86,124		335,853			47,442		28,808
1980	448,327				95,326							5,747
1981	104,030				95,968					14,041		5,500
1982		128,708	301,110		96,339					468,268		
1983					368,022	633				1,379,209		
1984				353,880	16,491	28,150				739,200		
1985						43,496				1,568,624	118,812	
1986	579,186					101,326				2,669,028		
1987	389,444				156,173	147,715	206,684			1,765,989	56,473	
1988		118,000			239,000	72,881	198,000	7,550	68,000	1,637,271		
1989					16,900	50,787		20,100		15,324	56,841	
1990	481,748				202,000	54,278	44,000	163,000			64,006	
1991					72,000	21,285	81,489			400	249,800	
1992					53,900	131,829	74,953				67,178	
1993	239,000	28,500			74,198	108,070	71,934				54,764	
1994						62,400					75,799	
1995						60,967					158,981	
1996						69,176						
1997						69,000					232,066	
1998						220,219					232,765	
1999					34,834	126,602					165,388	
2000					41,675	76,851					260,070	
2001					19,224	124,838					233,563	
2002					14,720	120,629					212,639	
2003					19,566	120,736					234,716	
2004						131,979					241,066	
2005						132,149					251,446	
2006						132,212					252,775	
2007						118,054					255,400	
2008						118,139					245,490	
2009						120,200					287,825	
2010						131,123					252,319	
2011						97,087					254,718	
2012						40,921					245,689	

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	Matanuska drainages, (247-50)			Turnagain Arm drainages (247-60)								
Year	Twin Lake	Wasilla Lake & Creek	Wasilla-Fishook Lakes	Bird Creek	Campbell Creek	Campbell & Ship Creeks	Granite Creek	Ingram Creek	Silvertip Creek	Six Mile Creek	Upper & Lower Summit Lake	Total coho salmon released to UCI drainages
1967												8,200
1968		152,900										369,100
1969												122,400
1970												177,200
1971												30,460
1972												87,700
1973												77,100
1974												90,500
1975												111,359
1976												141,700
1977												100,286
1978		110,126	110,448									526,567
1979		121,002	39,636									669,605
1980		121,679	92,242									763,321
1981		123,307	118,051									460,897
1982		122,711	145,861									1,265,947
1983										299,246		3,074,880
1984										300,088	29,998	2,915,425
1985	150,000	346,612						90,190		303,779		4,557,434
1986							204,552	71,760	34,040		89,968	5,232,667
1987			44,268				407,794	160,000			110,000	4,299,502
1988	95,000	273,575	91,000				42,700	80,344		27,125		8,639,621
1989		21,600										1,470,289
1990		152,000						80,000				2,927,690
1991		69,500										1,014,285
1992		76,315		100,924	97,076							1,106,290
1993		77,174		140,382	140,797							1,408,729
1994				84,643	87,686							671,206
1995				154,753	157,241							788,379
1996		141,923		147,618		302,857						777,842
1997				294,565	71,519							770,587
1998				164,211	83,317							801,645
1999				111,430	42,046							595,185
2000				97,409	63,730							643,054
2001					69,836							597,932
2002					61,323							525,246
2003					78,576							576,565
2004				109,949	85,790							652,458
2005				100,605	60,387							624,519
2006				104,974	78,805							650,719
2007				104,979	82,794							642,709
2008				113,035	83,421							560,085
2009				113,300	15,400							536,725
2010				157,534	50,214							591,190
2011				136,047	71,960							559,812
2012				70,004								356,614

Source: Mark, Tag and Age lab data base, http://mtalab.adfg.alaska.gov/CWT/reports/

Appendix F21.–Historic releases of pink salmon from hatcheries to upper and lower Cook Inlet, 1975–2012.

	Southern District				Eastern District	Kamishak Bay Dist.	Upper Cook Inlet		
Year	Tutka Bay	Halibut Cove Lagoon	Homer Spit	Port Graham Subdistrict	Resurrection Bay	Paint River	Eklutna River	Ingram Creek	Total pink salmon released
1975		50,916							50,916
1976									0
1977		318,280							318,280
1978	4,820,937								4,820,937
1979	9,243,717								9,243,717
1980	6,245,103					550,141			6,795,244
1981	9,759,144					509,609			10,268,753
1982	15,070,927					404,508			15,475,435
1983	14,730,794					501,956			15,232,750
1984	18,142,463								18,142,463
1985	23,537,000						281,500		23,818,500
1986	22,228,600	4,006,000					30,576		26,265,176
1987	4,385,600	3,001,400	594,500				38,267	259,200	8,278,967
1988	12,003,878	3,022,491	310,016					252,975	15,589,360
1989	30,091,053	6,229,062	331,695					325,380	36,977,190
1990	23,689,702	12,080,014	603,845					311,101	36,974,370
1991	23,657,112	6,039,062	303,826	255,000					30,602,576
1992	25,700,000	5,950,000	300,000	1,810,487					33,760,487
1993	48,700,000								48,700,000
1994	61,100,000			1,295,000					62,395,000
1995	63,000,000			358,000					63,358,000
1996	105,000,000			6,469,975					111,469,975
1997	89,000,000			918,000					89,918,000
1998	90,000,000								90,000,000
1999	60,132,000			4,617,362	48,329				64,797,691
2000	65,120,870			1,142,726	24,216				66,287,812
2001	99,336,410			27,298,797					126,635,207
2002	99,371,000			6,600,985					105,971,985
2003	67,967,000			57,200,000					125,167,000
2004	47,964,360			36,282,671					84,247,031
2005				26,567,983					26,567,983
2006				13,883,682					13,883,682
2007				13,282,049					13,282,049
2008									
2009									
2010									
2011									
2012	8,100,399	3,146,000[a]							11,246,399

[a] Released outside of Halibut Cove Lagoon, 1 kilometer east.

Appendix F22.–Historic releases of chum salmon from hatcheries to upper and lower Cook Inlet, 1974–2012.

	Southern District		Eastern District		Upper Cook Inlet			
Year	Halibut Cove	Tutka Bay	Jap Creek	Spring Creek	Eklutna River	Indian River	Susitna River	Total chum salmon released
1974	7,782							7,782
1975	595							595
1976								0
1977								0
1978								9,666
1979		597,377						597,377
1980								0
1981		7,992						7,992
1982		15,440						15,440
1983		1,117,745			1,536,892		24,848	2,679,485
1984		140,500			928,143	10,278	19,797	1,098,718
1985		25,977	282,622	173,187			14,312	496,098
1986		18,000			1,693,382			1,711,382
1987		445,700			2,740,773			3,186,473
1988		3,211,200			2,697,860			5,909,060
1989		2,164,393			6,121,337			8,285,730
1990		1,508,557			3,209,773			4,718,330
1991					2,535,335			2,535,335
1992					3,114,793			3,114,793
1993								
1994								
1995								
1996								
1997								
1998								
1999								
2000								
2001								
2002								
2003								
2004								
2005								
2006								
2007								
2008								
2009								
2010								
2011								
2012								

Appendix F23.–Harvest of sockeye salmon returning to China Poot and Neptune Bays in the Southern District of Lower Cook Inlet, 1979–2012.

Return year	Sport harvest [a]	Personal Use Dipnet harvest [b]	Commercial harvest [c]	Hatchery cost recovery [d]	Unharvested [e]	Total return
1979	650	0	2,975		0	3,625
1980	1,000	953	13,007		0	14,960
1981	1,500	0	24,215		0	25,715
1982	450	1,320	1,044		1,430	4,244
1983	480	5,466	91,946		10	97,902
1984	500	1,794	117,438		500	120,232
1985	500	796	60,890		920	63,106
1986	100	1,815	15,031		200	17,146
1987	200	1,231	61,453		0	62,884
1988	500	1,910	90,544		470	93,424
1989	1,000	5,416	84,082		0	90,498
1990	500	5,835	66,549		0	72,884
1991	1,000	1,528	142,560		0	145,088
1992	300	3,468	82,455	7,336	0	93,559
1993	400	4,551	131,367	0	0	136,318
1994	500	5,715	47,494	3,025	0	56,734
1995	1,000	8,605	132,892	12,497	450	155,444
1996	1,000	4,773	269,553	14,235	441	290,002
1997	650	4,773	121,184	0	1,130	127,737
1998	640	4,773	143,350	20,579	380	169,722
1999	640	4,773	187,207	16,188	522	209,330
2000	640	4,773	77,462	18,103	256	101,234
2001	640	4,773	99,866	27,037	57	132,373
2002	640	4,773	114,639	29,517	51	149,620
2003	640	4,773	391,768	35,557	121	432,859
2004	640	4,773	21,621	12,991	448	40,473
2005	640	4,773	65,333	29,737	1	100,484
2006	640	4,773	52,020	23,283	820	81,536
2007	640	4,773	61,193	22,586	501	89,693
2008	640	4,773	62,675	1,907	103	70,098
2009	640	4,773	0	205	223	5,841
2010	640	4,773	0	1,007	45	6,465
2011	640	4,773	9,945	0	18	15,376
2012	640	4,773	5,559	11,938	45	22,955

[a] Sport harvest figures for 1997-2012 represent the estimated previous 10-year average.

[b] Personal Use Harvest data for 1979-1981 from permits issued from the Homer office. Data from 1983-1995 is from the Statewide Harvest Survey (SWHS; e. g., [Mills 1984]). Data from 1996-current is an average of the last 5 years that the data was collected specifically for this fishery.

[c] The final "Commercial Harvest " figures are the total Common Property seine harvest in the Southern District except for 1999, 2000 and 2002 that only include harvests east of the Tutka District due to returning Tutka hatchery sockeye in those years. See text for further explanation.

[d] From cost recovery conducted in China Poot and Neptune Bays.

[e] "Unharvested fish" is the total count by ground survey staff of sockeye salmon remaining in China Poot Creek.

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Appendix F24.–Commercial catch and escapement of sockeye salmon at Chenik Lake in the Kamishak Bay District of Lower Cook Inlet, 1976–2012.

Return year	Commercial Harvest	Cost Recovery	Escapement [a]	Total return
1976	[b]		900	900
1977	[b]		200	200
1978	[b]		100	100
1979	[b]		[c]	[c]
1980	[b]		3,500	3,500
1981	[b]		2,500	2,500
1982	[b]		8,000	8,000
1983	2,800		11,000	13,800
1984	16,500		13,000	29,500
1985	10,624		3,500	14,124
1986	111,348		7,000	118,348
1987	97,411		10,000	107,411
1988	161,936		9,000	170,936
1989	38,905		12,000	50,905
1990	70,347		17,000	87,347
1991	51,773		10,189	61,962
1992	5,609	8,769	9,269	14,878
1993	19,988		4,000	23,988
1994	[b]		808	808
1995	[b]		1,086	1,086
1996	[b]		2,990	2,990
1997	[b]		2,338	2,338
1998	[b]		1,880	1,880
1999	[b]		2,850	2,850
2000	[b]		4,800	4,800
2001	[b]		250	250
2002	[b]		4,650	4,650
2003	[b]		13,825	13,825
2004	33,177		17,000	50,177
2005	47,013		14,507[d]	61,520
2006	11,783		13,868[d]	25,651
2007	161,630		18,230[d]	179,860
2008	171,255		11,284[d]	182,539
2009	65,727		15,264[d]	80,991
2010	5,471		17,312[d]	22,783
2011	82,826		10,330[d]	93,156
2012	55,255		16,505[d]	71,760

[a] Estimated from aerial surveys between 1976–1990 and 1998–present, weir counts between 1991 and 1997, unless otherwise noted.

[b] Closed to fishing.

[c] No data.

[d] Estimated from a combination of weir, video counts, and/or aerial counts.

Appendix F25.–Commercial catch of sockeye salmon at Kirschner Lake in the Kamishak Bay District of Lower Cook Inlet, 1989–2012.

Return year	Commercial Harvest	Cost Recovery	Unharvested [a]	Total return
1989	190	0	–	190
1990	14,465	0	–	14,465
1991	42,654	0	–	42,654
1992	40,043	0	–	40,043
1993	36,322	0	–	36,322
1994	14,465	16,787	–	31,252
1995	8,772	5,350	–	14,122
1996	18,093	13,511	–	31,604
1997	2,842	6,125	–	8,967
1998	8,112	19,390	–	27,502
1999	22,256	17,504	–	39,760
2000	10,236	21,391	–	31,627
2001	9,198	29,740	–	38,938
2002	0	32,492	–	32,492
2003	11,671	38,741	–	50,412
2004	0	16,372	–	16,372
2005	0	14,969	–	14,969
2006	24,130	26,310	–	50,440
2007	7,725	27,719	–	35,444
2008	0	11,588	–	11,588
2009	0	18,771	–	18,771
2010	0	8,858	–	8,858
2011	12,732	0	210	12,942
2012	0	1,260	1,300	2,560

[a] A barrier falls at the outlet of Kirschner Lake immediately above the intertidal zone precludes any escapement from entering this lake.

Appendix F26.–Commercial catch and escapement of pink and sockeye salmon in the Tutka Bay Subdistrict in the Southern District of Lower Cook Inlet, 1985–2012.

	Sockeye salmon			Pink salmon					
Return year	Commercial Harvest	Cost Recovery	Total Return	Commercial Harvest	Cost Recovery	Broodstock	Escapement	Sport catch[a]	Total Return
1975	12,600	–	12,600	89,200	–	0	17,600	–	106,800
1976	14,200	–	14,200	73,100	–	10,800 [b]	11,500	–	95,400
1977	21,300	–	21,300	21,900	–	6,528	14,000	–	42,428
1978	92,100	–	92,100	167,862	–	21,100	15,000	–	203,962
1979	15,600	–	15,600	421,816	–	21,200	10,600	2,000	455,616
1980	13,200	–	13,200	321,513	–	26,897	17,300	5,000	370,710
1981	41,000	–	41,000	1,026,574	–	22,000	28,000	6,000	1,082,574
1982	15,800	–	15,800	184,876	–	41,200	18,500	2,000	246,576
1983	35,900	–	35,900	615,459	–	53,800	12,900	5,000	687,159
1984	26,700	–	26,700	241,054	–	41,000	10,500	8,000	300,554
1985	14,886	–	14,886	491,181	–	43,000	14,000	8,000	556,181
1986	16,340	–	16,340	400,150	–	43,000	13,400	8,000	464,550
1987	14,659	–	14,659	56,465		22,000	4,800	500	83,765
1988	12,900	–	12,900	723,929	–	65,000	11,200	8,500	808,629
1989	13,461	–	13,461	632,147	–	5,100	11,900	10,000	659,147
1990	7,922	–	7,922	20,183	17,243	62,000	38,500	2,000	139,926
1991	7,039	34	7,073	14,691	101,837	103,100	16,820	2,000	238,448
1992	8,578	0	8,578	41,642	275,897	67,324	25,921	2,500	413,284
1993	5,797	8	5,805	128,347	409,431	107,242	27,403	2,000	674,423
1994	9,129	8	9,137	498,436	953,231	154,000	14,546	2,000	1,622,213
1995	12,323	3	12,326	1,212,342	1,213,322	166,052	15,899	3,000	2,610,615
1996	20,226	74	20,300	6,941	420,411	138,021	3,456	1,000	569,829
1997	9,686	0	9,686	130,406	2,375,653	216,786	45,000	2,100	2,769,945
1998	8,480	0	8,480	504,764	792,542	153,580	17,473	2,000	1,470,359
1999	18,711 [c]	88	18,799	222,228	857,902	151,903	27,947	2,000	1,261,980
2000	6,602	896	7,498	8,580	1,043,705	179,970	19,048	1,500	1,252,803
2001	16,500	5	16,505	109,682	421,408	179,006	4,451	1,500	716,047
2002	14,318	0	14,318	4,725	703,205	161,864	15,884	1,500	887,178
2003	24,090	2	24,092	4,324	507,215	207,285	30,866	1,500	751,190
2004	5,827	0	5,827	1,523	1,175,326	0 [d]	17,846	1,500	1,196,195
2005	6,252	0	6,252	4,779	1,631,806	0	133,600	1,500	1,771,685
2006	5,865	0	5,865	11,223	0	0	25,800	1,500	38,523
2007	8,272	0	8,272	0	0	0	5,700	1,500	7,200
2008	6,414	14,604	21,018	1,884	377	0	14,100	1,500	17,861
2009	9,185	11,584	20,769	2,136	0	0	3,800	1,500	7,436
2010	6,307	38,087	44,394	2,536	161	0	2,100	1,500	6,297
2011	10,516	7,836	18,352	1,911	5	12,665	21,974	1,500	38,055
2012	4,839	17,756	22,595	4,434	171	8,140	10,436	1,500	24,681

[a] Data from CIAA (2012).

[b] Start of enhancement at Tutka Lagoon Hatchery.

[c] First return of enhanced BY95 sockeye salmon. Previous year's harvest is intercepted China Poot returns and wild production.

[d] CIAA announced suspension of operations at Tutka Lagoon Hatchery.

Appendix F27.–Harvest of salmon from the Port Graham Section of the Port Graham Subdistrict in the Southern District of Lower Cook Inlet, 1985–2012.

	Sockeye salmon			Pink Salmon					
Return year	Commercial Harvest	Subsist. Harvest[a]	Cost Recovery	Commercial Harvest	Subsist. Harvest[b]	Cost Recovery	Broodstock (plus excess)	Escapement	Total Return
1985	787	481		3,668	32			26,300	30,000
1986	363	274		4,658	237			17,500	22,395
1987	246	219		359	230			3,800	4,389
1988	103	411		126	542			7,900	8,568
1989		94			640			19,100	19,740
1990		524			1,013			20,100	21,113
1991		58			1,494			29,000	30,494
1992		98			745			5,400	6,145
1993		154			997			12,800	13,797
1994		260			866			7,600	8,466
1995		379			786		16,224	10,000	27,010
1996	5,203	684		821	312		2,131	7,000	10,264
1997	8,597	324		46,854	497	85,354	21,888	12,500	167,093
1998	3,652	271		598	459		21,888	12,600	35,545
1999		382			150		0	9,700	9,850
2000	1,153	784			355		89,838	15,600	105,793
2001		176			20		34,773	10,300	45,093
2002	3,576	417		14	150	238,672	146,433	58,500	443,769
2003	5,034	1,991			266		78,241	14,900	93,407
2004	1,032	572			363	1,283,517	99,376	44,000	1,427,256
2005		192			349	510,802	84,088	69,100	664,339
2006		31			26	247,990	27,741	31,200	306,957
2007		552	23		74	117,962		25,600	143,636
2008	2,971	550	26,274		36	2,670		24,700	27,406
2009	9,057	1,982	8,292		49	866		14,000	14,915
2010	740	116			24			16,600	16,624
2011	59	687			132			20,883	21,015
2012	30	661	30	21,645	282	0	b	34,486	56,413

[a] Harvest as reported by Port Graham subsistence permit holders. The preponderance of harvest reported on the Port Graham permits are from the Port Graham section of the Port Graham Subdistrict.

[b] Commercial Common Property pink salmon 19,918 fish of the 21,645 harvested commercially were sold alive to processor for resale to hatchery as broodstock. CIAA reported 24,758 purchased. This discrepancy (24,758 vs. 19,918) may be related to variances in average weight per fish used to calculate number of fish from poundage.

Appendix F28.–Harvest of salmon in the English Bay Section of the Port Graham Subdistrict of the Southern District of Lower Cook Inlet, 1985–2012.

	Sockeye salmon			Coho salmon			Pink Salmon		
Return year	Comm. Harvest	Subsist. Harvest [a]	Cost Recovery	Comm. Harvest	Subsist. Harvest [a]	Cost Recovery	Comm. Harvest	Subsist. Harvest [a]	Cost Recovery
1985	2,712	696		2,250	530		8,830	313	
1986	1,592	373		1,475	302		4,106	825	
1987	2,114	682		1,352	339		1,985	484	
1988	1,254	610		1,384	385		10,562	1,214	
1989		63			695			855	
1990		638			614			1,947	
1991		630			1,512			3,093	
1992		437			675			676	
1993		994			567			1,666	
1994		570			511			1,113	
1995	2,580	1,416		1,823	169		10,168	487	
1996	6,981	1,060	5,934	1,553	598		658	437	
1997	16,657	1	7,817	1,414	0		12,940	14	
1998	8,080	18	6,202	23	0		760	0	1
1999		2,775	660		1,320			1,873	
2000	984	3,880		0	1,579		0	1,251	
2001		909			1,238			1,434	
2002	10,912	10,203	20,245	1	967		6	1,681	
2003	16,525	3,221	45,011	2	513		82	1,306	
2004	1,537	2,968		3	842		0	1,277	
2005		1,934			1,142			1,259	
2006		2,215			1,179			2,038	
2007	4,270	[b]		3	[b]		0	[b]	
2008	2,421	3,615		0	1,345		0	2,646	
2009	491	1,515		0	396		0	865	
2010	1,157	1,514		0	1,324		0	1,030	
2011	1,375	5,009		0	1,381		702	2,499	200
2012	0	300		0	400		0	200	0

[a] Harvest as reported by Nanwalek subsistence permit holders. The preponderance of harvest reported on the Nanwalek permits are from the English Bay section of the Port Graham Subdistrict

[b] No data available.

APPENDIX G: HERRING

Appendix G1.–Total biomass estimates and commercial catch of Pacific herring in short tons by age class, Kamishak Bay District, Lower Cook Inlet, 2010, and 2011 forecast.

Age	2010 Est. Spawning Biomass	Percent by Weight	2010 Commercial Harvest[a]	Percent by Weight	2010 Total Biomass	Percent by Weight	2011 Forecast Biomass	Percent by Weight
1								
2								
3	206	5.20%	–	–	206	5.20%	263	6.90%
4	440	11.10%	–	–	440	11.10%	354	9.20%
5	721	18.30%	–	–	721	18.30%	558	14.60%
6	1,025	26.00%	–	–	1,025	26.00%	774	20.20%
7	667	16.90%	–	–	667	16.90%	826	21.60%
8	461	11.70%	–	–	461	11.70%	459	12.00%
9	220	5.60%	–	–	220	5.60%	399	10.40%
10	87	2.20%	–	–	87	2.20%	93	2.40%
11	85	2.20%	–	–	85	2.20%	58	1.50%
12	16	0.40%	–	–	16	0.40%	34	0.90%
13+	16	0.40%	–	–	16	0.40%	9	0.20%
TOTALS	3,942	100.00%	–	–	3,942	100.00%	3,830	100.00%

Note: Due to reduction in funding, there were no charters to obtain age composition samples in 2011. A copy of 2010 data is provided as the most recent age composition data available.

[a] Because of low biomass forecasts, the commercial herring fishery in Kamishak Bay was not opened in 2010 or 2011.

Appendix G2.–Catch of Pacific herring in short tons and effort in number of permits making deliveries by district in the commercial sac roe seine fishery, Lower Cook Inlet, 1961–2012.

	Southern		Kamishak		Eastern		Outer		Total	
Year	Tons	Permits	Tons	Permits	Tons	Permits	Tons	Permits	Tons	Permits
1961	0	–	0	–	0	–	0	–	0	–
1962	0	–	0	–	0	–	0	–	0	–
1963	1	–	0	–	0	–	0	–	1	–
1964	0	–	0	–	0	–	0	–	0	–
1965	2	–	0	–	0	–	0	–	2	–
1966	0	–	0	–	7	–	0	–	7	–
1967	0	–	0	–	0	–	0	–	0	–
1968	20	–	0	–	0	–	0	–	20	–
1969	551	–	0	–	758	–	38	–	1,347	–
1970	2,709	–	0	–	2,100	–	0	–	4,809	–
1971	[a]	[a]	0	–	831	22	0	–	844	24
1972	[a]	[a]	0	–	[a]	[a]	0	–	[a]	[a]
1973	204	16	243	14	831	25	301	12	1,579	37
1974	110	7	2,114	26	47	5	384	26	2,655	45
1975	24	5	4,119	40	-- CLOSED --		-- CLOSED --		4,143	41
1976	0	0	4,842	66	-- CLOSED --		-- CLOSED --		4,842	66
1977	291	13	2,908	57	-- CLOSED --		-- CLOSED --		3,199	58
1978	17	7	402	44	-- CLOSED --		-- CLOSED --		419	44
1979	13	3	415	35	-- CLOSED --		-- CLOSED --		428	36
1980	-- CLOSED --		-- CLOSED --		-- CLOSED --		-- CLOSED --		-- CLOSED --	
1981	-- CLOSED --		-- CLOSED --		-- CLOSED --		-- CLOSED --		-- CLOSED --	
1982	-- CLOSED --		-- CLOSED --		-- CLOSED --		-- CLOSED --		-- CLOSED --	
1983	-- CLOSED --		-- CLOSED --		-- CLOSED --		-- CLOSED --		-- CLOSED --	
1984	-- CLOSED --		-- CLOSED --		-- CLOSED --		-- CLOSED --		-- CLOSED --	
1985	-- CLOSED --		1,132	23	204	7	[a]	[a]	1,348	29
1986	-- CLOSED --		1,959	54	167	4	28	3	2,154	57
1987	-- CLOSED --		6,132	63	584	4	202	9	6,918	69
1988	-- CLOSED --		5,548	75	0	–	[a]	[a]	5,605	76
1989	170	6	4,801	75	0	–	0	–	4,971	81
1990	-- CLOSED --		2,264	75	-- CLOSED --		-- CLOSED --		2,264	75
1991	-- CLOSED --		1,992	58	0	–	0	–	1,992	58
1992	-- CLOSED --		2,282	56	0	–	0	–	2,282	56
1993	-- CLOSED --		3,570	60	-- CLOSED --		-- CLOSED --		3,570	60
1994	-- CLOSED --		2,167	61	-- CLOSED --		-- CLOSED --		2,167	61
1995	-- CLOSED --		3,378	60	-- CLOSED --		-- CLOSED --		3,378	60
1996	-- CLOSED --		2,984	62	-- CLOSED --		-- CLOSED --		2,984	62
1997	-- CLOSED --		1,746[b]	45[b]	-- CLOSED --		-- CLOSED --		1,746	45
1998	-- CLOSED --		331[b]	20[b]	-- CLOSED --		-- CLOSED --		331	20
1999	-- CLOSED --		100[c]	1[c]	-- CLOSED --		-- CLOSED --		100	1
2000-2012	-- CLOSED --		-- CLOSED --		-- CLOSED --		-- CLOSED --		-- CLOSED --	
1961-1999 Average [d]	295	-NA-	2,520	49	556	-NA-	146	-NA-	2,205	-NA-

Source: Statewide electronic fish ticket database. Commercial Fisheries Entry Commission License Statistics, 1974–2012, Juneau.

[a] Confidential data. Fewer than 3 permits reporting.

[b] Includes both commercial harvest and ADF&G test fish harvest.

[c] Commercial fishery closed, ADF&G test fish harvest only.

[d] Averages based only on years with reported harvest.

Appendix G3.–Preseason estimates of biomass and projected commercial sac roe seine harvests, vs. actual harvests, for Pacific herring in short tons, average roe recovery, numbers of permits making landings, and exvessel value in millions of dollars, Kamishak Bay District, Lower Cook Inlet, 1978–2012.

Year	Preseason Forecasted Biomass (st)	Preseason Projected Harvest (st)[a]	Actual Commercial Harvest (st)[a]	Average Roe %	No. of Permits w/Landings	Exvessel Value[b] ($$ millions)
1978	[c]	[d]	402	33.4	44	[e]
1979	[c]	[d]	415	12.5	[e]	[e]
1980	[c]	[d]	CLOSED	–	–	–
1981	[c]	[d]	CLOSED	–	–	–
1982	[c]	[d]	CLOSED	–	–	–
1983	[c]	[d]	CLOSED	–	–	–
1984	[c]	[d]	CLOSED	–	–	–
1985	[c]	[d]	1,132	11.3	23	1
1986	[c]	[d]	1,959	10.4	54	2.2
1987	[c]	3,833	6,132	11.3	63	8.4
1988	[c]	5,190	5,548	11.1	75	9.3
1989	37,785	5,000	4,801	9.5	75	3.5[f]
1990	28,658	2,292	2,264	10.8	75	1.8
1991	17,256	1,554	1,992	11.3	58	1.3
1992	16,431	1,479	2,282	9.7	56	1.4
1993	28,805	2,592	3,570	10.2	60	2.2
1994	25,300	3,421	2,167	10.6	61	1.5
1995	21,998	2,970	3,378	9.8	60	4.0
1996	20,925	2,250	2,984	10.1	62	6.0[f]
1997	25,300	3,420	1,746	9.3	45	0.4
1998	19,800	1,780	331	8.5	20	0.1
1999	[g]	–	CLOSED[h]	–	–	–
2000	6,330	–	CLOSED	–	–	–
2001	11,352	–	CLOSED	–	–	–
2002	9,020	–	CLOSED	–	–	–
2003	4,771	–	CLOSED	–	–	–
2004	3,554	–	CLOSED	–	–	–
2005	3,058	–	CLOSED	–	–	–
2006	2,650	–	CLOSED	–	–	–
2007	2,286	–	CLOSED	–	–	–
2008	2,069	–	CLOSED	–	–	–
2009	[i]	–	CLOSED	–	–	–
2010	2,963	–	CLOSED	–	–	–
2011	3,830	–	CLOSED	–	–	–
2012	[i]	–	CLOSED	–	–	–

[a] Kamishak Bay allocation only, does not include Shelikof Strait food/bait allocation.

[b] Exvessel values exclude any postseason retroactive adjustments (except where noted).

[c] Prior to 1989, preseason forecasts of biomass were not generated.

[d] Prior to 1987, preseason harvest projections were not generated.

[e] Data not available.

[f] Includes retroactive adjustment.

[g] 1999 preseason biomass calculated as a range of 6,000 to 13,000 st.

[h] ADF&G test fishing harvested 100 st.

[i] No forecast of abundance generated for 2009 and 2012 due to lack of samples in previous year.

Appendix G4.–Summary of herring sac roe seine fishery openings and commercial harvests in the Kamishak Bay District of Lower Cook Inlet, 1969–2012.

Year	Dates of Openings	Total Hours Open	Harvest (short tons)	Catch Rate (short tons/ hour open)	Number of Permits w/Landings
1969–1972	No closed periods				
1973	" "		243		8
1974	1/1–5/20		2,114		26
1975	1/1–6/6	Closed Iniskin Bay, 5/17	4,119		40
1976	1/1-5/21	Closed Iniskin Bay, 5/17. Reopened Kamishak, 6/2.	4,824		66
1977	1/1–5/31	(Closed Kamishak Dist. 5/12; reopened 5/14–5/17; reopened 5/29–5/31)	2,908		57
1978[a]	4/16–5/31	96	402	4	44
1979	5/12–5/24	112	415	4	36
1980–1984	CLOSED	0	0		
1985	4/20–6/15	1,350	1,132	1	23
1986	4/20–6/13	1,303	1,959	2	54
1987	4/21–4/23	65	6,132	94	63
1988	4/22–4/29	42	5,548	132	74
1989	4/17–4/30	24.5	4,801	196	74
1990	4/22–4/23	8	2,264	283	75
1991	4/26	1	1,992	1,992	58
1992	4/24	0.5	2,282	4,564	56
1993	4/21	0.75	3,570	4,760	60
1994	4/25	0.5	778	1,556	35
	4/29	1	1,338	1,338	53
1995	4/27	0.5	1,685	3,370	45
	4/28	1	1,693	1,693	44
1996	4/24	0.5	2,984	5,968	62
	4/25[b]	0.5	0	0	0
1997	4/29	1.5	1,580	1,053	42
	4/30	[c]	[c]	[c]	[c]
	5/1	12	51	4	4
	5/22[d]	[d]	54	[d]	–
1998	4/21	0.5	160	320	12
	4/22	2	136	68	11
	5/14[d]	[d]	10	[d]	–
	5/22[d]	[d]	23	[d]	–
1999–2012	CLOSED	0	100[e]		

[a] Management by emergency order began (closed until opened).

[b] Despite the open fishing period, the entire fleet collectively agreed not to fish due to ongoing price negotiations with processors.

[c] Confidential data. Fewer than 3 permits reporting.

[d] ADF&G test fish harvest.

[e] ADF&G test fish harvest in 1999.

Appendix G5.–Comparison of preseason biomass forecast/projected harvest and actual commercial herring sac roe seine harvest vs. hindcast (age-structured-assessment) estimates of total biomass and exploitation rate in Kamishak Bay District, Lower Cook Inlet, 1990–2012.

Year	Preseason Forecasted Biomass (st)	Preseason Projected Harvest (st)[a]	Actual Commercial Harvest (st)[a]	Estimated Exploitation Rate (%)[b]	ASA Hindcast Total Biomass Estimate (st)[c,d,e]	Hindcast Exploitation Rate (%)[c,f]
1990	28,658	2,292	2,264	7.9	19,841	11.4
1991	17,256	1,554	1,992	11.5	20,369	9.8
1992	16,431	1,479	2,282	13.9	18,257	12.5
1993	28,805	2,592	3,570	12.4	16,176	22.1
1994	25,300	3,421	2,167	8.6	13,203	16.4
1995	21,998	2,970	3,378	15.4	10,220	33.1
1996	20,925	2,250	2,984	14.3	6,950	42.9
1997	25,300	3,420	1,746	6.9	4,742	36.8
1998	19,800	1,780	331	1.7	4,137	8.0
1999	[g]	–	CLOSED[h]	–	4,015	–
2000	6,330	–	CLOSED	–	3,904	–
2001	11,352	–	CLOSED	–	3,643	–
2002	9,020	–	CLOSED	–	3,296	–
2003	4,771	–	CLOSED	–	3,233	–
2004	3,554	–	CLOSED	–	2,906	–
2005	3,058	–	CLOSED	–	3,162	–
2006	2,650	–	CLOSED	–	3,193	–
2007	2,286	–	CLOSED	–	3,641	–
2008	2,069	–	CLOSED	–	4,087	–
2009	[i]	–	CLOSED	–	3,790	–
2010	2,963	–	CLOSED	–	3,942	–
2011	3,830	–	CLOSED	–	[i]	–
1990 - 2011 Average[j]	12,818	2,418	2,302	10.3%	7,462	21.4%
2012	[i]	–	CLOSED	–	[i]	–

Source: Otis 2004; Otis and Cope 2004; Yuen 1994.

[a] Kamishak Bay allocation only, does not include Shelikof Strait food/bait allocation.

[b] Estimated exploitation rate based on preseason forecasted biomass and actual commercial harvest for each year.

[c] Figures are based on the best available data at the time of publishing and are subject to change as new data is incorporated into the model; therefore all figures herein supersede those previously reported.

[d] Age-structured-assessment (ASA) model integrates heterogeneous data sources and simultaneously minimizes differences between observed and expected return data to forecast the following year's biomass as well as hindcast previous years' biomass.

[e] ASA estimates based on the most recent available hindcast, run in 2010.

[f] Estimated exploitation rate based on ASA hindcast estimates of biomass combined with actual commercial harvest.

[g] 1999 preseason biomass calculated as a range of 6,000 to 13,000 short ton.

[h] ADF&G test fishing harvested 100 short ton.

[i] No ASA forecasted or hindcasted abundance estimate possible due to lack of age composition samples.

[j] Averages based only on years with data presented.

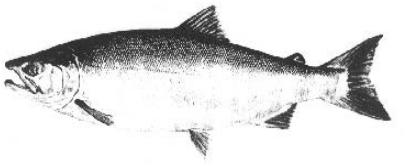
APPENDIX H: 2012 OUTLOOK

Appendix H1.–Lower Cook Inlet salmon fishery outlook, 2012.

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE

Cora Campbell, Commissioner

Jeff Regnart, Director



Contact:
Glenn Hollowell, Area Finfish Management Biologist
Ethan Ford, Fishery Biologist I
Phone: (907) 235-8191
Fax: (907) 235-2448

Homer Area Office
3298 Douglas Place
Homer, AK 99603

Date Issued: April 17, 2012
Time: 2:00 PM

2012 LOWER COOK INLET SALMON FISHERY OUTLOOK

General Information

This outlook is provided to assist the commercial salmon industry in planning for the 2012 season in the Lower Cook Inlet (LCI) Management Area. Preseason forecasts and previous 5 year commercial common property harvest averages are the basis for the information provided. Forecasts for LCI can be found on ADF&G's web site:

http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyarealci.salmon

Cook Inlet Aquaculture Association (CIAA) manages the Trail Lakes Hatchery, and the Tutka Lagoon Hatchery. Hatchery forecasts can be found through the CIAA web site:

http://www.ciaanet.org

Inseason modifications to harvest projections, season opening dates, and strategies for weekly fishing periods may occur as fisheries develop. Hatchery Annual Management Plans (AMP) are used to provide guidelines to ADF&G when managing enhanced fisheries to achieve cost recovery and broodstock objectives. CIAA AMPs underwent Regional Planning Team (RPT) review on April 6, and have been submitted for the commissioner's signature.

The forecasts for commercial common property fishery (CCPF) harvests by species are summarized in Table 1. The pink salmon forecast is derived from a spawner-recruit analysis, whereas run projections for other species and districts are based on average historical production. Projected returns of hatchery originated salmon are provided by CIAA. These projections of hatchery and wild stock returns will provide the basis for early season management in all districts with other management tools such as aerial survey estimates, weir counts, remote video monitoring and anticipated harvest being used as the season progresses. Management of the LCI commercial salmon fisheries is based in the Homer area office. All emergency order announcements of fishery openings and closures are broadcast on VHF channel 10.

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As was done last year, fishery announcements from the Homer ADF&G office will routinely occur at 2:00 PM or earlier if possible. Announcement recordings will be available for commercial fisheries at 907-235-7307. Emergency order announcement information is also transmitted by FAX and email to all registered processors, local radio stations, news media and interested members of the public. Harvest information and fisheries announcements are located on the ADF&G web site: http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyarealci.salmon
In addition, interested individuals may sign up to receive email announcements:

http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main

The first announcement is anticipated to be released at 2:00 PM, Thursday, May 17 and concerns CIAA cost recovery harvest.

The preliminary CIAA annual corporate budget for fiscal year 2012 incorporates an overall cost recovery goal of 1.55 million dollars. Based upon current market conditions, and an average weight of 5.8 pounds per fish, CIAA anticipates harvesting approximately 145,000 sockeye salmon to achieve this goal. The majority of these will likely come from returns to Resurrection Bay releases where 216,000 sockeye salmon are anticipated to return. The remainder will be harvested from Tutka Bay Lagoon where 28,000 sockeye salmon are anticipated to return.

The overall commercial common property harvest from Lower Cook Inlet is anticipated to be 642,000 salmon. Of those, 104,000 sockeye salmon are anticipated to be of hatchery origin with the remaining salmon of wild origin. Total anticipated harvest by species is shown on Table 1.

Set Gillnet Fishery

The **Southern District** is anticipated to open for the 2012 season on June 1 at 6:00 AM for a 24-hour period. Following periods will likely be 48-hours in length beginning at 6:00 AM on Monday and Thursday as specified in regulation. The 5-year harvest averages for this area and gear are 160 Chinook, 700 coho and 1,700 chum salmon. The 5-year commercial harvest average for the wild sockeye salmon harvested in the English Bay Section is 1,943 fish. Harvests for 2012 are anticipated to be similar to the historic average. ADF&G's preliminary pink salmon forecast estimated a harvestable surplus of 62,000 fish from the Southern District; which is to be shared by commercial set gillnet and purse seine permit holders. Sockeye salmon returns to subdistricts outside of the English Bay Section are comprised significantly of fish returning to hatchery release sites at Leisure Lake, Hazel Lake, and Tutka Bay Lagoon. Returns to Leisure and Hazel lakes from the 2009 release (2008 brood year) of 3.2 million sockeye salmon is anticipated to be 6,500 fish. Fishing time in the Port Graham Subdistrict will be closely linked to escapement levels to English Bay Lakes. Management priority will be to provide for the subsistence needs of those immediate communities at the level prescribed in the Customary and Traditional Use finding in 5 AAC 01.566(d) of 4,800 – 7,200 salmon. The Port Graham Subdistrict is anticipated to remain closed to commercial harvest until escapement is tracking to meet the overall spawning escapement goal (6,000 – 13,500) and hatchery broodstock goals (1,022 fish). In addition, CIAA anticipates 2,000 sockeye salmon will return to the waters just offshore of Port Graham where 112,000 smolt were released in 2009 (2008 brood year). These fish were taken from English Bay Lakes broodstock, reared and thermally marked at the Trail Lakes Hatchery, and released near the Port Graham Hatchery. Further information regarding previous year's hatchery releases and commercial harvests may be found in Annual Management Reports for this area at:

http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyarealci.salmon#/management

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Purse Seine Fishery

Portions of the **Southern District** are anticipated to open to purse seine harvest in mid-June coinciding with enhanced returns to Leisure and Hazel lakes. Historically this return peaks from July 15-21 (week 29). CIAA anticipates a return of 6,500 sockeye salmon to Leisure and Hazel lakes combined, as well as 28,000 sockeye salmon to Tutka Bay. All hatchery returns to Tutka Bay are anticipated to be used by CIAA for cost recovery and broodstock purposes.

Commercial fishing time in late July through early September will be correlated to pink salmon escapement at Humpy Creek, Seldovia Bay, Port Graham and other locations in this district. Given the present lack of pink salmon returns to hatcheries in Lower Cook Inlet since 2008, overall seine harvest for the Southern District is anticipated to be diminished. Harvest in 2011 was 512 pink salmon (and 9,900 sockeye salmon) by 5 purse seine permit holders.

Hatchery sockeye salmon returns to the **Eastern District** are forecast by CIAA to be 216,000 fish. This is greater than last year's forecasted return of 143,000 Trail Lakes Hatchery produced fish, where the actual estimated total return was 249,000 sockeye salmon. This district is anticipated to open on May 21 to cost recovery harvest with common property fishing occurring in early June after cost recovery is completed. Wild stock harvest from the Eastern District will be linked to aerial survey observations of wild sockeye and pink salmon escapement to Aialik Lake and other spawning systems in this district.

Portions of the **Outer District** are anticipated to open to commercial harvest in mid-July focusing on sockeye returns to McCarty Fjord lakes. Escapement to these systems is monitored by aerial survey (Desire and Delusion lakes) as well as a weir at the outlet of Delight Lake. In addition, waters in the western portion of this district are also anticipated to open at this time and later focusing on pink and chum salmon returns to Port Dick, as well as Windy and Rocky bays. There are numerous other smaller systems in the Nuka Passage area that are also monitored for returning chum and pink salmon. In the far west end of this district, systems with the latest return timing: Dogfish Bay, Chugach Bay and Port Chatham will be evaluated for chum and pink salmon harvest potential from August to early September. The previous 5-year harvest average for this district is 16,700 sockeye and 36,800 chum salmon. ADF&G has forecast a harvestable surplus of 256,000 pink salmon from this district.

Portions of the **Kamishak Bay District** open by regulation to commercial harvest on June 1. Previous 5-year average harvests for this district (excluding the Kirchner Subdistrict) are 98,300 sockeye and 36,900 chum salmon with the majority of the sockeye salmon harvest attributed to Chenik Lake runs and the chum salmon harvest spread throughout the district. Due to poor pink salmon escapement in 2011, ADF&G has forecast that there will not be a significant commercial harvest of pink salmon from this district. Returns of hatchery released sockeye to the Kirchner Lake outfall remote release site are anticipated to be 10,200 fish. This is similar to last years anticipated harvest, where 11,800 were forecasted, with 12,732 actually harvested from July 15-22. These hatchery produced fish may be available for common property harvest if cost recovery goals can be achieved using Resurrection Bay and Tutka Bay sockeye salmon returns. ADF&G tracks salmon escapement in this district using remote video monitoring sites at Chenik and Mikfik lakes, as well as regular aerial survey observations of index streams.

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Table 1.-Projected harvest of salmon for Lower Cook Inlet, 2012.

SOCKEYE SALMON	Total anticipated harvest =		**246,800**
Natural stocks, (5-yr average commercial harvest)			
Southern District, (English Bay Section only)			1,900
Eastern District, (Aialik Bay)			25,700
Outer District			16,700
Kamishak Bay District, (excluding Kirchner Lake Subdistrict)			98,300
Hatchery Stocks[a]	**Total**	**Hatchery**	**Commercial**
Resurrection Bay	216,000	130,500	85,500
Leisure and Hazel lakes	6,500	0	6,500
Tutka Bay Lagoon	28,000	28,000	0
Kirchner Lake	10,200	0	10,200
Port Graham Bay	2,000	0	2,000

PINK SALMON, ADF&G Preliminary Pink Salmon Forecast[c]	Total anticipated harvest =	**318,000**
Southern District (combined gear)		62,000
Eastern District		0
Outer District		256,000
Kamishak Bay District		0

CHUM SALMON - 5-year average harvest	Total anticipated harvest =	**75,540**
Southern District (purse seine)		70
Southern District (set gillnet)		1,700
Eastern District		70
Outer District		36,800
Kamishak Bay District		36,900

COHO SALMON - 5-year average harvest	Total anticipated harvest =	**1,630**
Southern District (purse seine)		800
Southern District (set gillnet)		700
Eastern District		0
Outer District		30
Kamishak Bay District		100

CHINOOK SALMON – 5-year average harvest	Total anticipated harvest =	**196**
Southern District (purse seine)		31
Southern District (set gillnet)		160
Eastern District		0
Outer District		2
Kamishak Bay District		2
Total LCI anticipated commercial common property harvest- all salmon species =		**642,165**

[a] Provided by Cook Inlet Aquaculture Association, based on parent year releases and recent ocean survival.
[b] Includes hatchery cost recovery, broodstock and natural spawning escapement.
[c] Available online at: http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyarealci.salmon#/forecasts